February 1998

**Idaho
National
Engineering
Laboratory**

ICPP Calcined Solids Storage Facility Closure Study

Volume II

**Cost Estimates, Planning Schedules,
Yearly Cost Flowcharts, and Life-
Cycle Cost Estimates**

MASTER

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

LOCKHEED MARTIN

Rev. 3/13/1998 OSTI

This volume contains draft information on cost estimates, planning schedules, yearly cost flowcharts, and life-cycle costs for the four options described in Volume I, Section 2:

- Option 1: Risk-Based Clean Closure; NRC Class C fill
- Option 2: Risk-Based Clean Closure; Clean fill
- Option 3: Closure to Landfill Standards; NRC Class C fill
- Option 4: Closure to Landfill Standards; Clean fill

Cost estimates were also prepared for Risk-Based Clean Closure; NRC Class A fill and Closure to Landfill Standards; NRC Class A fill. These cost estimates are not included in this volume. Further analysis has shown, however, that the CSSF cannot be filled with NRC Class A grout following Closure to Landfill Standards, as the concentration of various radionuclides exceed the concentration limits for Class A type waste. Additional decontamination cycles, not included in the original cost estimate, would be required to fill the bins with Class A type waste following Risk-Based Clean Closure. Estimates were done for the additional decontamination cycles and are given in EDF-BSC-016, *Cost Estimate for RBCC; NRC Class A Landfill*, February 1998.

This volume is divided into two portions. The first portion contains the cost and planning schedule estimates, while the second half contains life-cycle costs and yearly cash flow information for each option.

NOTE: The options numbers in the Life-Cycle Costs (LCC) do not match the final option numbers in the report, as these estimates were prepared prior to determining that it is not feasible to create an NRC Class A landfill following Risk-Based Clean Closure (RBCC) or Closure to Landfill Standards (CLFS).

For the purposes of the LCC section only, the following key is provided:

- Option 1: Risk-Based Clean Closure; NRC Class C fill (Option 1 in LCC)
- Option 2: Risk-Based Clean Closure; Clean fill (Option 3 in LCC)
- Option 3: Closure to Landfill Standards; NRC Class C fill (Option 4 in LCC)
- Option 4: Closure to Landfill Standards; Clean fill (Option 6 in LCC)

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

Lockheed Martin Idaho Technologies Company**INTERDEPARTMENTAL COMMUNICATION**

Date: January 28, 1998

To: B. C. Spaulding MS 3765 6-8633

From: S. L. Coward *SC* MS 3655 6-0399

Subject: ICPP BIN SET CLOSURE (EIS STUDY) - SLC-05-97

Cost Estimating has prepared Planning Cost Estimates for the subject project. These estimates were based on information received from you and your design team through December 17, 1997, as well as any subsequent comments from the review team.

The Total Project Costs (TPC) are broken down into present day (unescalated) and escalated costs, as follows:

Unescalated

Option 1	Risk Based Clean Closure; Class C Fill	\$255,000,000
Option 2	Risk Based Clean Closure; Class A Fill	\$249,000,000
Option 3	Risk Based Clean Closure; Clean Fill	\$227,000,000
Option 4	Closure to RCRA Landfill Standards; Class C Fill	\$162,000,000
Option 5	Closure to RCRA Landfill Standards; Class A Fill	\$155,000,000
Option 6	Closure to RCRA Landfill Standards; Clean Fill	\$132,000,000

Escalated

Option 1	Risk Based Clean Closure; Class C Fill	\$514,000,000
Option 2	Risk Based Clean Closure; Class A Fill	\$501,000,000
Option 3	Risk Based Clean Closure; Clean Fill	\$460,000,000
Option 4	Closure to RCRA Landfill Standards; Class C Fill	\$327,000,000
Option 5	Closure to RCRA Landfill Standards; Class A Fill	\$316,000,000
Option 6	Closure to RCRA Landfill Standards; Clean Fill	\$271,000,000

The actual estimates were generated in several parts in order to mix and match component processes. The totals from these estimates make up the TPC and are shown on the Cost Estimate Summary Sheets. These costs include permitting costs, direct and indirect costs, Engineering costs, Inspection costs, Project and Construction Management costs, and associated procurement fees. G&A and PIF have been included in this estimate. In addition, contingency and escalation to the midpoint of the activities have been included. For more detailed information, please refer to the Cost Estimate Support Data Recapitulation forms.

January 28, 1998
SLC-05-98
Page 2 of 2

Attached for your review are the Summary Estimate Sheets, the Cost Estimate Support Data Recapitulation forms, Detailed Estimate sheets, Contingency Analysis sheets, and Estimate Schedules for the twelve different options.

If you have any questions or comments, please do not hesitate to contact me at 526-0399 or Office Vision - ID SQJ.

SLC

Attachments

cc: Estimate File #2423
S. L. Coward File

A handwritten signature, likely of S. L. Coward, is written in ink next to the distribution list.

COST ESTIMATE SUPPORT DATA RECAPITULATION

Project Title: ICPP BIN SET CLOSURE (EIS Study)

Type of Estimate: Planning
File No: 2423

Estimator: Sherry Coward
Date: January 28, 1997
Approved By:

I. SCOPE OF WORK: *Brief description of the proposed project.*

Scope of work includes the closure of the seven Calcined Solids Storage Facilities (CSSFs) located at the ICPP following after calcine retrieval. The estimates are broken down into six different options, as follows:

- Risk Based Clean Closure - Clean Fill
- Risk Based Clean Closure - Class C Fill
- Risk Based Clean Closure - Class A Fill
- Closure to RCRA Landfill Standards - Clean Fill
- Closure to RCRA Landfill Standards - Class C Fill
- Closure to RCRA Landfill Standards - Class A Fill

Each option includes component type estimates for the various functions within the option.

II. BASIS OF THE ESTIMATE: *Drawings, Design Report, Engineers notes, and/or other documentation upon which the estimate is originated.*

1. Verbal information obtained from Bryan Spaulding and the design team
2. Quantities of vaults, bins, calcine, etc. are derived from Engineering Design File (EDF) #EDF-BSC-001
3. Costs for the tractor robot, pipe crawler, and Light Duty Utility Arm (LDUA) are derived from Engineering Design File (EDF) #EDF-BSC-014

III. ASSUMPTIONS: *Condition statements accepted or supposed true without proof or demonstration. An assumption has a direct impact on total estimated cost.*

- It was assumed that Project Management and Construction Management will be 10% of construction costs respectively, Engineering and Design - Title I and II will be 20% of construction costs, Engineering and Design - Conceptual will be 5% of construction costs, and Inspection will be 5% of construction costs for all estimates with the exception of the D&D of equipment. In this estimate, the D&D cost is all inclusive.

- Continued on Page 2 -

COST ESTIMATE SUPPORT DATA RECAPITULATION
(CONTINUATION)

File No: 2423

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III. ASSUMPTIONS: (Continued)

- Indirect markups were assumed to be:
 - Consumables and small tools - 3% of labor
 - Construction equipment (cranes, etc.) - 10% of labor
 - NQA-1 Quality requirements - 25% of material
 - DOE/RW/0333P Quality standards - 10% of material
 - Subcontractor procurement costs - 1% of equipment and material
 - Material and equipment overhead and profit - 5% of material and equipment
 - General contractor's profit on Subcontracts - 10% of Subcontracts
 - Bond - 2% of Construction Costs
 - Labor Indirects, Overhead and Profit - 50% of labor
- LMITCO G&A has been applied at 23% of construction and GFE, with a \$500,000 ceiling applied, and the Performance Incentive Fee (PIF) has been applied at 5.5%. Procurement fees have been assumed at 1%, as procurement support to DOE, rather than the normal 3% fee.
- Permitting and documentation for the separate options were included in a separate estimate. These estimates were broken down into one estimate to cover "clean" fill and one estimate to cover "Class C" or "Class A" fill.
- It was assumed that the pre-engineered metal containment enclosure and Ventilation, Instrumentation, and Control (VIC) building that will be constructed at each CSSF for the calcine retrieval process will remain and can be used during the closure process also.
- Assume HVAC equipment required during the calcine retrieval process will remain and be used during the grout installation process.
- Assume all monitoring equipment for the containment enclosures and VICs will remain in place from the retrieval process and can be used for the closure process.
- In most cases, unit costs were derived from the cost estimate for the Tank Farm at ICPP.

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**COST ESTIMATE SUPPORT DATA RECAPITULATION
(CONTINUATION)**

File No: 2423

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III. ASSUMPTIONS: (Continued)

- Estimates for the various options are included at both present-day costs which include the Cost Estimate Summary, Detail Sheets, and Contingency Analysis, and escalated costs to the midpoint of the activities. Only the Summary Sheet and Contingency Analysis have been provided for the escalated estimates. For more information, the Detail Sheets can be referenced. In addition, the D&D Model showing the facility ratings and assumptions is included for present-day costs for the D&D of equipment.

Assumptions relating to the vault estimates:

- Assume that four 18" diameter access holes with shielding will be required to obtain access to the vaults to install the grout. It was assumed that four holes will be required in order to keep the grout level during the 4' lifts and to fill any voids.
- It was assumed that the subcontractor would be required to purchase a grout pump, air compressor, etc. for the grout installation of the vaults. To assure coverage when the component estimates were compiled, the costs for these items were included in the estimates for the bin options also. Therefore, these costs may be inflated by two in the Summary.
- It was assumed that the grout manifold and cleaning system would be cleaned and reused after each vault.
- It was assumed that the grout delivery piping would be cleaned after each lift within each vault.
- It was assumed that the grout drop tubes and accessories purchased would be the quantity required to complete the distance for the tallest vault times 4 tubes, and then could be cleaned and reused for the next vault, etc.
- It was assumed that the grout delivery piping required would be a single run of 200' plus 4 lines times 1/2 of the maximum height of the vaults (assume 1/2 of the vaults are below grade).

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COST ESTIMATE SUPPORT DATA RECAPITULATION
(CONTINUATION)

File No: 2423

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III. ASSUMPTIONS: (Continued)

Assumptions relating to the bin estimates:

- Assume that each bin will require two 18" diameter access holes for the robots to be placed within the bins. The risers and the 18" holes will be completed during the calcine retrieval process. However, the holes will require capping during this closure process.
- It was assumed that four (4) radiation monitors per bin will be installed at the base of the tanks, except on CSSF #1. On CSSF #1, radiation monitors will be installed on the outer bin of the 4 tanks. However, it was assumed that this function will require no excavation due to previous excavations. Gravel will be placed around the monitors.
- Assume that access to the bins for installation of the grout will be available through previously existing or constructed risers installed during the retrieval process. No penetrations into the bins will be required for this project.
- Quantities for the bin heights required to estimate grout drop tubes were obtained from the above referenced EDF.
- It was assumed that the grout manifold and cleaning system would be cleaned and reused after each CSSF is complete.
- It was assumed that the grout delivery piping from the manifold to the grout tubes would be cleaned after each 4' lift within each bin.
- It was assumed that the grout drop tubes and accessories purchased would be the maximum quantity required for one CSSF. This quantity will be adequate for reuse in the remaining CSSFs after cleaning.
- It was assumed that the grout delivery piping would include a single run of 200' pipe from the grout delivery point to the manifold plus additional piping lines running vertically up the vaults to the drop tubes. (Assume 1/2 of vaults will be below grade)

COST ESTIMATE SUPPORT DATA RECAPITULATION
(CONTINUATION)

File No: 2423

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III. ASSUMPTIONS: (Continued)

- It was assumed that the NRC Class C grout will be poured in 4' lifts and then wait 7 days before the next lift can be poured. In some cases, a waiting period might be required for the scheduling of the next pour.
- It was assumed that an existing pipe control-center trailer will be available at the site for the Class C grout pour.
- The retrieval tubes for each bin will not be reused on a subsequent bin, but will be bagged and disposed of after filling each bin with Class C grout.
- The delivery pipe and manifolds will be bagged and disposed of after each CSSF is completed with Class C grout pour.
- Assume that 1,600 CY of Class C, NRC grout can be pumped per year.
- It was assumed that the installation of the NRC Class C grout will be performed continuously around the clock until the CSSFs are completed.

Assumptions relating to the retrieval of calcine with robots:

- Costs were based on the information provided in the EDF-BSC-014 for the tractor robot, pipe crawler, and the robotic arm (LDUA). The base costs were derived from the INEEL costs shown therein and doubled to equal the IS Robotics cost for the initial unit, since this cost is all inclusive. The duplicate units for the tractor were based on IS Robotics' cost for duplicate units. The same basis and ratio of duplicate units were used for the LDUAs and the pipe crawlers.
- An allowance was included for fabrication of the additional robotic units to design and make modifications specifically needed for each CSSF.

COST ESTIMATE SUPPORT DATA RECAPITULATION (CONTINUATION)

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III. ASSUMPTIONS: (Continued)

- Costs for the actual operation of the robotic units to retrieve the remaining 5% of calcine from the CSSFs were included in this estimate. The estimated costs were based on calculations derived from the engineer and include making 3 passes, which will involve continuously working around the clock, for the risk-based estimates. The RCRA closure estimates are based on only 1 pass and 1 shift/day.
- It was assumed that the tractor units for cleaning the floor will be left in the bins, but the LDUAs used for cleaning the walls and the pipe crawlers will be pulled out and reused on the other bins within
- It was assumed that costs for the supervisor, training, and the two radcon technicians could share their time between the work for the cleaning of the piping and the walls since it will be done at the same time. Therefore, the costs were split equally between the two estimates.
- The costs for the actual operation of the robotic units to retrieve the remaining 5% of calcine from the bin walls and piping were shared equally between the piping cleaning estimate and the wall cleaning estimate.
- Costs to construct an area for shielding when pulling the LDUAs and the pipe crawlers out of the bins are included in the pipe crawler/cleaning estimate.

Assumptions relating to the retrieval of calcine with robots:

- The costs associated with the D&D Model include all costs associated with the D&D of facilities or structures. These costs include project Management, Construction Management, Engineering, Inspection, etc. Therefore, no additional costs were applied, other than escalation, to the D&D estimate.
- The costs derived from the D&D model are based on assumed facility ratings for the equipment and assumed square footages that would require D&D.

**COST ESTIMATE SUPPORT DATA RECAPITULATION
(CONTINUATION)**

File No: 2423

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IV. CONTINGENCY GUIDELINE IMPLEMENTATION:

Because of the level of development and the lack of information for this project, generally contingency was applied at 35%, which is at the upper range of the guidelines suggested in the INEL Cost Estimating Guide. This was deemed reasonable because of the major risks involved with contaminated areas, and the fact that much of the equipment will require development.

ESCALATION SCHEDULE

MATRIX – MIDPOINT OF ACTIVITY

OPTIONS	Grout "Clean" In Vaults			Grout "Clean" In Bins			NRC Class A and C In Bins			Cleaning with Robots Walls & Piping			Cleaning with Robots Floors			Permit/Doc. RCRA/Risk Base Grout "Clean"		Permit/Doc RCRA/Risk Base NRC Class A&C		D&D of Equip.
	2423–A2			2423–A1			2423–B & B1			2423–D & E			2423–C			2423–A1D		2423–BD		2423
	ED&I	Mgmt.	Constr.	ED&I	Mgmt.	Constr.	ED&I	Mgmt.	Constr.	ED&I	Mgmt.	Constr.	ED&I	Mgmt.	Constr.	Mgmt.	Permit	Mgmt.	Permit	D&D
RCRA Closure–Clean	1/1/14	6/1/23	6/1/24	10/1/13	10/1/23	1/1/25	----	----	----	----	----	----	1/1/13	8/1/22	8/1/24	7/1/13	7/1/13	----	----	2035
RCRA Closure–NRC Class C	7/1/13	9/1/22	9/1/23	----	----	----	7/1/22	6/1/27	12/1/28	----	----	----	7/1/12	10/1/21	10/1/23	----	----	1/1/12	1/1/12	2035
RCRA Closure–NRC Class A	7/1/13	9/1/22	9/1/23	----	----	----	7/1/22	6/1/27	12/1/28	----	----	----	7/1/12	10/1/21	10/1/23	----	----	1/1/12	1/1/12	2035
Risk Based–Clean Grout	7/1/14	6/1/23	6/1/24	1/1/14	7/1/24	11/1/25	----	----	----	1/1/13	8/1/22	8/1/24	4/1/13	6/1/23	6/1/25	7/1/13	7/1/13	----	----	2035
Risk Based–NRC Class C	7/1/13	9/1/22	9/1/23	----	----	----	7/1/22	11/1/27	7/1/29	7/1/12	10/1/21	10/1/23	10/1/12	12/1/22	1/1/24	----	----	1/1/12	1/1/12	2035
Risk Based–NRC Class A	7/1/13	9/1/22	9/1/23	----	----	----	7/1/22	11/1/27	7/1/29	7/1/12	10/1/21	10/1/23	10/1/12	12/1/22	1/1/24	----	----	1/1/12	1/1/12	2035

ASSUME: Class A has Same Midpoint of Activities as Class C

COST ESTIMATE SUMMARY
UNESCALATED

ICPP BIN SET CLOSURE	Planning Estimate	1/28/98
RISK BASED CLEAN CLOSURE	Estimate #2423	
CLASS C FILL		Checked by:
Requestor: B. C. Spaulding	Prepared by: S. L. Coward	Approved by:
Regulatory Compliance		19,500,000
Fill Vaults with Clean Grout		12,400,000
Clean Bins with Robots		
Floor		132,400,000
Walls		30,600,000
Piping		13,400,000
Fill Bins with NRC Class C Grout		30,100,000
D&D of Equipment		17,000,000
TOTAL		\$255,400,000
	USE	\$255,000,000

RISK BASED CLEAN CLOSURE -- NRC CLASS C GROUT

DESCRIPTION	BIN SET #1	BIN SET #5	BIN SET #7	BIN SET #6	BIN SET #3	BIN SET #4	BIN SET #2
Scheduled Completion	(1/1/14)	(4/1/18)	(12/1/22)	(11/1/26)	(8/1/28)	(2/1/31)	(5/1/31)
ASSUME: Wait 6 Months until Start of Closure							
Permitting (5 Years)	7/1/9–7/1/14						
Grout Vaults "Clean" (Assume 1 Year)							
ED&I (2 Yrs)	7/1/12–7/1/14						
Management	7/1/12–11/1/32						
Construction	7/1/14–7/1/15	10/1/18–10/1/19	6/1/23–6/1/24	5/1/27–5/1/28	2/1/29–2/1/30	8/1/31–8/1/32	11/1/31–11/1/32
Clean Bin Walls/Piping with Robot	(3 Months)	(15 Months)	(25 Months)	(24 Months)	(17 Months)	(7 Months)	(13 Months)
ED&I (4 Yrs)	7/1/10–7/1/14						
Management	7/1/10–12/1/32						
Construction	7/1/14–10/1/14	10/1/18–1/1/20	6/1/23–7/1/25	5/1/27–5/1/29	2/1/29–7/1/30	8/1/31–3/1/32	11/1/31–12/1/32
Clean Bin Floors with Robot	(3 Months)	(15 Months)	(25 Months)	(24 Months)	(17 Months)	(7 Months)	(13 Months)
ED&I (4 Yrs)	10/1/10–10/1/14						
Management	10/1/10–1/1/34						
Construction	10/1/14–1/1/15	1/1/20–4/1/21	7/1/25–8/1/27	5/1/29–5/1/31	7/1/30–12/1/31	3/1/32–10/1/32	12/1/32–1/1/34
RCRA CLOSURE							
Grout Bins "NRC Class C"	(3 Months)	(11 Months)	(18 Months)	(17 Months)	(12 Months)	(6 Months)	(10 Months)
ED&I (3 Yrs)	1/1/21–1/1/24						
Management	1/1/21–8/1/34						
Construction	1/1/24–4/1/24	4/1/24–3/1/25	8/1/27–2/1/29	5/1/31–10/1/32	10/1/32–10/1/33	10/1/33–4/1/34	4/1/34–2/1/35

ASSUMPTIONS:

- 1) Installation of NRC Class C Grout into bins are based on individual schedules for each bin set. These schedules assume everything is in place for pouring at start-up date, and allow no flexibility for error or downtime.
- 2) More than 1 crew could be utilized simultaneously for pouring the "clean" grout into the vaults.
- 3) More than 1 crew could be utilized simultaneously for cleaning the separate bins. However, cleaning of the floors will require scheduling after cleaning the walls/piping.
- 4) Cleaning of bin floors are based on individual bin pre-rated calcine retrieval volumes to total volume. These schedules assume mob/demob, installation of robotic units, and any modifications of bins will be completed and bins will be ready for retrieval.
- 5) Because of the difficulty of cleaning of bin walls/piping, it was assumed that it would take the same duration as the cleaning of the bin floors for each bin.
- 6) Installation of "clean" grout into vaults will average 1 year per vault.

COST ESTIMATE SUMMARY

PROJECT NAME: Permitting/Documentation
Risk Based - NRC Class C
LOCATION 1: INEEL/ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: PLANNING
PROJECT NO: 2423-bD
PREPARED BY: S. L. Coward
REPORT NAME: Cost Estimate Summary

DATE: 27-Jan-1998
TIME: 19:51:07
CHECKED BY:
APPRD BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
<u>1.1</u>	<u>CONCEPTUAL</u>			>> \$0
1.1.1	CONCEPTUAL DESIGN	0	0	0
<u>1.2</u>	<u>MANAGEMENT</u>			>> \$2,374,382
1.2.1	PM FOR PROJECT DEVELOPMENT	1,896,534	0	1,896,534
1.2.2	PROJECT EXECUTION	477,848	0	477,848
<u>1.3</u>	<u>PERMITTING</u>			>> \$11,946,206
1.3.1	PERMITTING	11,946,206	0	11,946,206
1.5.2	PROCUREMENT FEES	119,462	0	>> \$119,462
	SUBTOTAL INCLUDING ESCALATION	14,440,050	0	>> \$14,440,050
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$1,206,567
	CONTINGENCY			>> \$3,853,383
	TOTAL ESTIMATED COST			>> \$19,500,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 0.00%

CONTINGENCY= 35.04%

PAGE # 1

TIME: 19:51:09

TYPE OF ESTIMATE: PLANNING
PROJECT NO.: 2423-bD
PREPARED BY: S. L. Coward

[illegible]

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: PLANNING

PROJECT NO.: 2423-bD

PREPARED BY: S. L. Coward

PAGE # 2

DATE 27-Jan-1998

TIME: 19:51:09

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

Rev 6-96

PROJECT NAME: Permitting/Documentation
Risk Based - NRC Class C

TYPE OF ESTIMATE: PLANNING
PROJECT NO.: 2423-bd

DATE 27-Jan-1998
TIME: 19:51:09

LOCATION 1: INEEL/ICPP
REQUESTOR: Bryan Spaulding

PREPARED BY: S. L. Coward

REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	SIC (OTHER 1)	TOTAL COST
	PROJECT SUBTOTAL						162,280	\$9,106,206	\$0	\$0	\$5,214,382	\$14,320,588

PROJECT NAME: Permitting/Documentation
Risk Based - NRC Class C

TYPE OF ESTIMATE: PLANNING

DATE: 27-Jan-1998

PROJECT NO: 2423-bD

TIME: 19:51:03

LOCATION 1: INEEL/ICPP

PREPARED BY: S. L. Coward

REQUESTOR: Bryan Spaulding

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	CONCEPTUAL DESIGN	0	0.00	10	40	0.00	0.00	0.000%	0.00%	0	0
1.2.1	PM FOR PROJECT DEVELOPMENT	1,896,534	13.13	10	40	1.31	5.25	4.597%	13.13%	684,566	2,561,100
1.2.2	PROJECT EXECUTION	477,848	3.31	10	40	0.33	1.32	1.158%	3.31%	167,443	645,291
1.3.1	PERMITTING	11,946,206	82.73	10	40	8.27	33.09	28.955%	82.73%	4,186,080	16,132,286
1.5.2	PROCUREMENT FEES	119,462	0.83	10	40	0.08	0.33	0.290%	0.83%	41,861	161,323
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
SUBTOTAL		14,440,050	100.00					35.000%			
CALCULATED CONTINGENCY		5,054,017									
RESULTANT TEC		19,494,067									
ROUNDED TEC		19,500,000									
PROJECT CONTINGENCY		5,059,950						35.04%			
MANAGEMENT RESERVE		1,206,567									
CONTINGENCY		3,853,383									
TOTAL ESTIMATED COST		19,500,000								5,059,950	19,500,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%

Experimental/Special Conditions.....Up to 50%

Conceptual 15% - 25%

Experimental/Special Conditions.....Up to 40%

TITLE I 10% - 20%

TITLE II 5% - 15%

TITLE III/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLASS C FILL; UNESCALATED

REGULATORY COMPLIANCE

PROCUREMENT FEE:

CONSTRUCTION =	\$11,946,206	
GFE =		
Subtotal	\$11,946,206	
FEE @ 1% =	\$11,946,206 * 0.01 =	\$119,462

G&A @ 23% (with a ceiling of \$500,000 imposed per year , 5 Years)

CONSTRUCTION OR		
CEILING * 5 YEARS =	\$2,500,000	
GFE =	\$0	
PROCUREMENT FEE =	\$119,462	
Subtotal	\$2,619,462	
FEE @ 23% =	\$2,619,462 * 0.23 =	\$602,476

PIF @ 5.5%

CONSTRUCTION =	\$11,946,206	
GFE =	\$0	
PROCUREMENT FEE =	\$119,462	
G&A =	\$602,476	
Subtotal	\$12,668,144	
FEE @ 5.5% =	\$12,668,144 * 0.055 =	\$696,748

TOTAL PROCUREMENT FEE:	\$119,462
TOTAL G&A FEE:	\$602,476
TOTAL PIF:	\$696,748

Lockheed Martin Idaho Technologies Co.

Rev. 6-96

COST ESTIMATE SUMMARY

PROJECT NAME: ICPP Bin Set Closure (EIS Stud
 Place Clean Grout in Vault
 LOCATION 1: ICPP
 REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
 PROJECT NO: 2423-A2
 PREPARED BY: S. L. Coward
 REPORT NAME: Cost Estimate Summary

DATE: 27-Jan-1998
 TIME: 19:54:43
 CHECKED BY:
 APPRD BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
<u>1.1</u>	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> <u>\$1,589,774</u>
1.1.1	DESIGN ENGINEERING	1,324,812	0	1,324,812
1.1.2	TITLE III INSPECTION	264,962	0	264,962
<u>1.2</u>	<u>MANAGEMENT COSTS</u>			>> <u>\$2,216,357</u>
1.2.1	PROJECT MANAGEMENT	1,686,432	0	1,686,432
1.2.2	CONSTRUCTION MANAGEMENT	529,925	0	529,925
<u>1.3</u>	<u>CONSTRUCTION</u>			>> <u>\$5,299,250</u>
1.3.1	GENERAL CONDITIONS	1,067,791	0	1,067,791
1.3.2	SITWORK	0	0	0
1.3.3	CONCRETE	4,231,459	0	4,231,459
1.5.2	PROCUREMENT FEES	52,992	0	>> <u>\$52,992</u>
	SUBTOTAL INCLUDING ESCALATION	9,158,373	0	>> \$9,158,373
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$535,224
	CONTINGENCY			>> \$2,706,403
	TOTAL ESTIMATED COST			>> \$12,400,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 30.00%

CONTINGENCY= 35.40%

Rev 6-96

LOCATION 1: **ICPP**
REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: Planning
PROJECT NO.: 2423-A2
PREPARED BY: S. L. Coward

DATE 27-Jan-1998

TIME: 19:54:45

REPORT NAME: Detail Cost Estimate Sheet

[illegible]

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-A2

PREPARED BY: S. L. Coward

PAGE # 2

DATE **27-Jan-1998**

TIME: 19:54:45

REPORT NAME: Detail Cost Estimate Sheet

[illegible]

Rev 6-96

Place Clean Grout in Vault

ICPP

Bryan Spaulding

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-A2

PREPARED BY: **S. L. Coward**

3

DATE **27-Jan-1998**

TIME: 19:54:45

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

Rev 6-96

PROJECT NAME: ICPP Bin Set Closure (EIS Study)

TYPE OF ESTIMATE: Planning

DATE 27-Jan-1998

PROJECT NO.: 2423-A2

TIME: 19:54:45

PREPARED BY: S. L. Coward

REPORT NAME: Detail Cost Estimate Sheet

LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	SIC (OTHER 1)	TOTAL COST
1.3.3.1 MEMO:	VAULT GROUTING Assume 4 tubes x 7 vaults plus 10% waste											
	GROUT PLACEMENT & CLEANUP (Includes 10% Waste)	22,946	CY	80.00	CONC GEN	0.350	8,031	257,236		1,835,680		2,092,916
	VAULT GROUTING S/T						9,093	\$291,236		\$1,843,480		\$2,134,716
1.3.3.2	BIN SET VAULT ACCESS HOLES CORE DRILL 16" HOLE THROUGH VAULT ROOF (4 PLACES/VAULT)	28	EA	1,000.00	CONC GEN	100.000	2,800	89,684		28,000		117,684
	SHIELDING AROUND VAULT HOLES	28	EA	5,000.00	CONC GEN	24.000	672	21,524		140,000		161,524
	CAP 16" DIAMETER HOLES	28	EA	1,800.00	CONC GEN	40.000	1,120	35,874		50,400		86,274
	BIN SET VAULT ACCESS HOLES S/T						4,592	\$147,082		\$218,400		\$365,482
	PROJECT SUBTOTAL						36,012	\$1,377,853	\$80,000	\$2,097,960	\$3,806,131	\$7,361,944

Lockheed Martin Idaho Technologies Co.
CONTINGENCY ANALYSIS

Rev 6-96

PROJECT NAME: ICPP Bin Set Closure (EIS Stud

Place Clean Grout in Vault

TYPE OF ESTIMATE: Planning

PROJECT NO: 2423-A2

PREPARED BY: S. L. Coward

DATE: 27-Jan-1998

TIME: 19:54:39

LOCATION 1: ICPP

REQUESTOR: Bryan Spaulding

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING	1,324,812	14.47	10	40	1.45	5.79	5.063%	14.47%	468,920	1,793,732
1.1.2	TITLE III INSPECTION	264,962	2.89	10	40	0.29	1.16	1.013%	2.89%	93,784	358,746
1.2.1	PROJECT MANAGEMENT	1,686,432	18.41	10	40	1.84	7.37	6.445%	18.41%	596,916	2,283,348
1.2.2	CONSTRUCTION MANAGEMENT	529,925	5.79	10	40	0.58	2.31	2.025%	5.79%	187,568	717,493
1.3.1	GENERAL CONDITIONS	1,067,791	11.66	10	40	1.17	4.66	4.081%	11.66%	377,947	1,445,738
1.3.2	SITWORK	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.3.3	CONCRETE	4,231,459	46.20	10	40	4.62	18.48	16.171%	46.20%	1,497,735	5,729,194
1.5.2	PROCUREMENT FEES	52,992	0.58	10	40	0.06	0.23	0.203%	0.58%	18,757	71,749
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
SUBTOTAL		9,158,373	100.00					35.000%			
CALCULATED CONTINGENCY		3,205,431									
RESULTANT TEC		12,363,804									
ROUNDED TEC		12,400,000									
PROJECT CONTINGENCY		3,241,627						35.40%			
MANAGEMENT RESERVE		535,224									
CONTINGENCY		2,706,403									
TOTAL ESTIMATED COST		12,400,000								3,241,627	12,400,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%

Experimental/Special Conditions.....Up to 50%

Conceptual 15% - 25%

Experimental/Special Conditions.....Up to 40%

TITLE I 10% - 20%

TITLE II 5% - 15%

TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLASS C FILL; UNESCALATED

FILL VAULTS W/ CLEAN GROUT

PROCUREMENT FEE:

CONSTRUCTION =	\$5,299,250	
GFE =		
Subtotal	\$5,299,250	
FEE @ 1% =	\$5,299,250 * 0.01 =	\$52,993

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 7 yrs)

CONSTRUCTION OR		
CEILING * 7 YEARS =	\$3,500,000	
GFE =	\$0	
PROCUREMENT FEE =	\$52,993	
Subtotal	\$3,552,993	
FEE @ 23% =	\$3,552,993 * 0.23 =	\$817,188

PIF @ 5.5%

CONSTRUCTION =	\$5,299,250	
GFE =	\$0	
PROCUREMENT FEE =	\$52,993	
G&A =	\$817,188	
Subtotal	\$6,169,431	
FEE @ 5.5% =	\$6,169,431 * 0.055 =	\$339,319

TOTAL PROCUREMENT FEE:	\$52,993
TOTAL G&A FEE:	\$817,188
TOTAL PIF:	\$339,319

Lockheed Martin Idaho Technologies Co.

Rev. 6-96

PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
Tractor (Risk Based Estimates)**
 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

COST ESTIMATE SUMMARY

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-C1**
 PREPARED BY: **S. L. Coward**
 REPORT NAME: **Cost Estimate Summary**

DATE: **27-Jan-1998**
 TIME: **20:42:03**
 CHECKED BY: _____
 APPR'D BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$13,200,325
1.1.1	DESIGN ENGINEERING TITLE I & II	9,900,244	0	9,900,244
1.1.2	TITLE III INSPECTION	3,300,081	0	3,300,081
1.2	<u>MANAGEMENT COSTS</u>			>> \$18,240,120
1.2.1	PROJECT MANAGEMENT	11,639,957	0	11,639,957
1.2.2	CONSTRUCTION MANAGEMENT	6,600,163	0	6,600,163
1.3	<u>CONSTRUCTION</u>			>> \$66,001,630
1.3.1	GENERAL CONDITIONS	6,840,414	0	6,840,414
1.3.13	SPECIAL CONSTRUCTION	59,161,216	0	59,161,216
1.5.2	PROCUREMENT FEES	660,016	0	>> \$660,016
	SUBTOTAL INCLUDING ESCALATION	98,102,091	0	>> \$98,102,091
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$6,666,165
	CONTINGENCY			>> \$27,631,744
	TOTAL ESTIMATED COST			>> \$132,400,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 20.00%

CONTINGENCY= 34.96%

[illegible]

[illegible]

Lockheed Martin Idaho Technologies Co.
Rev 6-96
PROJECT NAME: ICPP Bin Set Closure (EIS Study)
Tractor (Risk Based Estimates)
LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

DETAILED COST ESTIMATE SHEET
TYPE OF ESTIMATE: Planning
PROJECT NO.: 2423-C1
PREPARED BY: S. L. Coward

PAGE # 3
DATE 27-Jan-1998
TIME: 20:42:05
REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.13	SPECIAL CONSTRUCTION Design of Development of Modifications to Add'l Units	52	EA		GEM	0.000					1,300,000	1,300,000
	INSTALLATION OF CLEANING UNIT:											
	Install Robotic Units	50	EACH		SKWK GEM	160.000	8,000	284,880				264,880
	Install and Shield Unit Hose/Tubes (Mods, Electr., etc.) - Allowance	50	EA	5,000.00	SKWK GEM	160.000	8,000	284,880		250,000		614,880
	Systems Integration	1	LS		GEM	0.000					75,000	75,000
	CAP 18" DIAMETER HOLES	100	EA	1,800.00	SKWK GEM	40.000	4,000	132,440		180,000		312,440
	CAP 6" DIAMETER HOLES	100		500.00	SKWK GEM	24.000	2,400	79,464		50,000		129,464
	OPERATION OF CALCINE RETRIEVAL -	19	FTE		SKWK GEM	34590.0	657,210	21,760,223				21,760,223
	SPECIAL CONSTRUCTION S/T						679,610	\$22,501,887		\$480,000	\$*,***,***	\$40,356,887
	PROJECT SUBTOTAL						744,485	\$25,478,570	\$0	\$480,000	\$51,656,545	\$77,615,115

Lockheed Martin Idaho Technologies Co.

Rev 6-96

CONTINGENCY ANALYSIS

 PROJECT NAME: ICPP Bin Set Closure (EIS Stud
Tractor (Risk Based Estimates)

 TYPE OF ESTIMATE: Planning
PROJECT NO: 2423-C1
PREPARED BY: S. L. Coward

 DATE: 27-Jan-1998
TIME: 20:42:00

 LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	9,900,244	10.09	10	40	1.01	4.04	3.532%	10.09%	3,461,268	13,361,512
1.1.2	TITLE III INSPECTION	3,300,081	3.36	10	40	0.34	1.35	1.177%	3.36%	1,153,756	4,453,837
1.2.1	PROJECT MANAGEMENT	11,639,957	11.87	10	40	1.19	4.75	4.153%	11.87%	4,069,497	15,709,454
1.2.2	CONSTRUCTION MANAGEMENT	6,600,163	6.73	10	40	0.67	2.69	2.355%	6.73%	2,307,512	8,907,675
1.3.1	GENERAL CONDITIONS	6,840,414	6.97	10	40	0.70	2.79	2.440%	6.97%	2,391,508	9,231,922
1.3.13	SPECIAL CONSTRUCTION	59,161,216	60.31	10	40	6.03	24.12	21.107%	60.31%	20,683,616	79,844,832
1.5.2	PROCUREMENT FEES	660,016	0.67	10	40	0.07	0.27	0.235%	0.67%	230,751	890,767
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	1	1
SUBTOTAL		98,102,091	100.00					35.000%			
CALCULATED CONTINGENCY		34,335,732									
RESULTANT TEC		132,437,823									
ROUNDED TEC		132,400,000									
PROJECT CONTINGENCY		34,297,909						34.96%			
MANAGEMENT RESERVE		6,666,165									
CONTINGENCY		27,631,744									
TOTAL ESTIMATED COST		132,400,000								34,297,909	132,400,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLASS C FILL; UNESCALATED

CLEAN BINS W/ ROBOTS - FLOOR

PROCUREMENT FEE:

CONSTRUCTION =	\$66,001,630	
GFE =		
Subtotal	\$66,001,630	
FEE @ 1% =	\$66,001,630 * 0.01 =	\$660,016

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 10 yrs)

CONSTRUCTION OR		
CEILING * 10 YEARS =	\$5,000,000	
GFE =	\$0	
PROCUREMENT FEE =	\$660,016	
Subtotal	\$5,660,016	
FEE @ 23% =	\$5,660,016 * 0.23 =	\$1,301,804

PIF @ 5.5%

CONSTRUCTION =	\$66,001,630	
GFE =	\$0	
PROCUREMENT FEE =	\$660,016	
G&A =	\$1,301,804	
Subtotal	\$67,963,450	
FEE @ 5.5% =	\$67,963,450 * 0.055 =	\$3,737,990

TOTAL PROCUREMENT FEE:	\$660,016
TOTAL G&A FEE:	\$1,301,804
TOTAL PIF:	\$3,737,990

COST ESTIMATE SUMMARY

PROJECT NAME: ICPP Bin Set Closure (EIS Stud
LDUA (Risk Based Estimates)
LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
PROJECT NO: 2423-D
PREPARED BY: S. L. Coward
REPORT NAME: Cost Estimate Summary

DATE: 27-Jan-1998
TIME: 20:47:33
CHECKED BY:
APPRD BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
<u>1.1</u>	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> <u>\$2,778,017</u>
1.1.1	DESIGN ENGINEERING TITLE I & II	2,083,513	0	2,083,513
1.1.2	TITLE III INSPECTION	694,504	0	694,504
<u>1.2</u>	<u>MANAGEMENT COSTS</u>			>> <u>\$5,871,039</u>
1.2.1	PROJECT MANAGEMENT	3,407,558	0	3,407,558
1.2.2	CONSTRUCTION MANAGEMENT	2,463,481	0	2,463,481
<u>1.3</u>	<u>CONSTRUCTION</u>			>> <u>\$13,890,099</u>
1.3.1	GENERAL CONDITIONS	1,831,085	0	1,831,085
1.3.13	SPECIAL CONSTRUCTION	12,059,014	0	12,059,014
1.5.2	PROCUREMENT FEES	138,901	0	>> <u>\$138,901</u>
	SUBTOTAL INCLUDING ESCALATION	22,678,056	0	>> \$22,678,056
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$1,402,900
	CONTINGENCY			>> \$6,519,044
	TOTAL ESTIMATED COST			>> \$30,600,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 20.00%

CONTINGENCY= 34.93%

Rev 6-96
PROJECT NAME: **ICPP Bin Set Closure (EIS Study)
LDUA (Risk Based Estimates)**
LOCATION 1: **ICPP**
REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **Planning**
PROJECT NO.: **2423-D**
PREPARED BY: **S. L. Coward**

DATE 27-Jan-1998
TIME: 20:47:35

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

[illegible]

Rev 8-96
PROJECT NAME: ICPP Bin Set Closure (EIS Study)
LDUA (Risk Based Estimates)

TYPE OF ESTIMATE: Planning
PROJECT NO.: 2423-D
PREPARED BY: S. L. Coward

DATE 27-Jan-1998
TIME: 20:47:36
REPORT NAME: Detail Cost Estimate Sheet

LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.13	SPECIAL CONSTRUCTION Design of Modifications for add'l Units	6	EA		GEN	0.000					450,000	450,000
	INSTALLATION OF CLEANING UNIT:											
	Install Robotic Units	50	EACH		SKWK GEN	200.000	10,000	331,100				331,100
	Install and Shield Unit Hose/Tubes (Mods, Electr., etc.) - Allowance	50	EA	5,000.00	SKWK GEN	200.000	10,000	331,100		250,000		581,100
	Systems Integration	1	LS		GEN	0.000					100,000	100,000
	Shielding and Retrieval Area	7	EA		GEN	0.000					350,000	350,000
	CAP 18" DIA. HOLES - ASSUME Holes were capped in Floor Estimate	50	EA		SKWK GEN	40.000	2,000	66,220				66,220
	CAP 6" DIAMETER HOLES - Assume Holes were capped in Floor Estimate	50	EA		SKWK GEN	24.000	1,200	39,732				39,732
	OPERATION OF CALCINE RETRIEVAL	19	FTE		SKWK GEN	828.000	15,732	520,887				520,887
	SPECIAL CONSTRUCTION S/T						38,932	\$1,289,039		\$250,000	\$8,450,000	\$9,989,039
	PROJECT SUBTOTAL						71,452	\$2,780,112	\$0	\$250,000	\$17,099,056	\$20,129,168

Lockheed Martin Idaho Technologies Co.

Rev 6-96

 PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
LDUA (Risk Based Estimates))**

 TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-D**
 PREPARED BY: **S. L. Coward**

 DATE: **27-Jan-1998**
 TIME: **20:47:30**

 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

 REPORT NAME: **Contingency Analysis**

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	2,083,513	9.19	10	40	0.92	3.67	3.216%	9.19%	727,817	2,811,330
1.1.2	TITLE III INSPECTION	694,504	3.06	10	40	0.31	1.22	1.072%	3.06%	242,606	937,110
1.2.1	PROJECT MANAGEMENT	3,407,558	15.03	10	40	1.50	6.01	5.259%	15.03%	1,190,335	4,597,893
1.2.2	CONSTRUCTION MANAGEMENT	2,463,481	10.86	10	40	1.09	4.35	3.802%	10.86%	860,548	3,324,029
1.3.1	GENERAL CONDITIONS	1,831,085	8.07	10	40	0.81	3.23	2.826%	8.07%	639,638	2,470,723
1.3.13	SPECIAL CONSTRUCTION	12,059,014	53.17	10	40	5.32	21.27	18.611%	53.17%	4,212,479	16,271,493
1.5.2	PROCUREMENT FEES	138,901	0.61	10	40	0.06	0.24	0.214%	0.61%	48,521	187,422
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
SUBTOTAL		22,678,056	100.00					35.000%			
CALCULATED CONTINGENCY		7,937,320									
RESULTANT TEC		30,615,376									
ROUNDED TEC		30,600,000									
PROJECT CONTINGENCY		7,921,944						34.93%			
MANAGEMENT RESERVE		1,402,900									
CONTINGENCY		6,519,044									
TOTAL ESTIMATED COST		30,600,000								7,921,944	30,600,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE
 Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING

 20% - 30%
 Experimental/Special Conditions.....Up to 50%

Conceptual

 15% - 25%
 Experimental/Special Conditions.....Up to 40%

TITLE I

10% - 20%

TITLE II

5% - 15%

TITLE II/AFC

Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLASS C FILL; UNESCALATED

CLEAN BINS W/ ROBOTS - WALLS

PROCUREMENT FEE:

CONSTRUCTION =	\$13,890,099	
GFE =		
Subtotal	\$13,890,099	
FEE @ 1% =	\$13,890,099 * 0.01 =	\$138,901

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 10 yrs)

CONSTRUCTION OR		
CEILING * 10 YEARS =	\$5,000,000	
GFE =	\$0	
PROCUREMENT FEE =	\$138,901	
Subtotal	\$5,138,901	
FEE @ 23% =	\$5,138,901 * 0.23 =	\$1,181,947

PIF @ 5.5%

CONSTRUCTION =	\$13,890,099	
GFE =	\$0	
PROCUREMENT FEE =	\$138,901	
G&A =	\$1,181,947	
Subtotal	\$15,210,947	
FEE @ 5.5% =	\$15,210,947 * 0.055 =	\$836,602

TOTAL PROCUREMENT FEE:	\$138,901
TOTAL G&A FEE:	\$1,181,947
TOTAL PIF:	\$836,602

Lockheed Martin Idaho Technologies Co.

Rev. 6-96

PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
Pipe Crawler (Risk Based Estim**
 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

COST ESTIMATE SUMMARY

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-E**
 PREPARED BY: **S. L. Coward**
 REPORT NAME: **Cost Estimate Summary**

DATE: **27-Jan-1998**
 TIME: **20:52:33**
 CHECKED BY: _____
 APPRD BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$1,185,557
1.1.1	DESIGN ENGINEERING	889,168	0	889,168
1.1.2	TITLE III INSPECTION	296,389	0	296,389
1.2	<u>MANAGEMENT COSTS</u>			>> \$2,742,481
1.2.1	PROJECT MANAGEMENT	2,149,702	0	2,149,702
1.2.2	CONSTRUCTION MANAGEMENT	592,779	0	592,779
1.3	<u>CONSTRUCTION</u>			>> \$5,927,794
1.3.1	GENERAL CONDITIONS	1,831,085	0	1,831,085
1.3.13	SPECIAL CONSTRUCTION	4,096,709	0	4,096,709
1.5.2	PROCUREMENT FEES	59,278	0	>> \$59,278
	SUBTOTAL INCLUDING ESCALATION	9,915,110	0	>> \$9,915,110
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$598,707
	CONTINGENCY			>> \$2,886,183
	TOTAL ESTIMATED COST			>> \$13,400,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 20.00%

CONTINGENCY= 35.15%

Rev 6-96

**PROJECT NAME: ICPP Bin Set Closure (EIS Study)
Pipe Crawler (Risk Based Estimates)**

TYPE OF ESTIMATE: Planning

DATE **27-Jan-1998**

TIME: 20:52:35

LOCATION 1: ICPP

PROJECT NO.: 2423-E

REPORT NAME: **Detail Cost Estimate Sheet**

REQUESTOR: **Bryan Spaulding**

PREPARED BY: S. L. Coward

[illegible]

DATE: 27-Jan-1998
TIME: 20:52:35
REPORT NAME: Detail Cost Estimate Sheet

[illegible]

Rev 6-96
PROJECT NAME: ICPP Bin Set Closure (EIS Study)
Pipe Crawler (Risk Based Estimates)
LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning
PROJECT NO.: 2423-E
PREPARED BY: S. L. Coward

DATE 27-Jan-1998
TIME: 20:52:35
REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.13	SPECIAL CONSTRUCTION Design of Modifications for add'l units	6	EA		GEN	0.000					90,000	90,000
	INSTALLATION OF PIPE CRAWLER											
	Install Robotic Units	50	EACH		SKWK GEN	180.000	9,000	297,990				297,990
	Install and Shield Unit Hose/Tubes (Mods, Electr., etc.) - Allowance	50	EA	5,000.00	SKWK GEN	180.000	9,000	297,990		250,000		547,990
	Systems Integration	1	LS		GEN	0.000					100,000	100,000
	Shielding and Retrieval Area	7			GEN	0.000					350,000	350,000
	CAP 18" DIAMETER HOLES - ASSUME Holes Capped in Floor Estimate	50	EA		SKWK GEN	40.000	2,000	66,220				66,220
	CAP 6" DIAMETER HOLES - ASSUME Holes Capped in Floor Estimate	50	EA		SKWK GEN	24.000	1,200	39,732				39,732
	OPERATION OF CALCINE RETRIEVAL	19	FTE		SKWK GEN	515.000	9,785	323,981				323,981
	SPECIAL CONSTRUCTION S/T						30,985	\$1,025,913		\$250,000	\$1,760,000	\$3,035,913
	PROJECT SUBTOTAL						63,505	\$2,516,987	\$0	\$250,000	\$5,688,038	\$8,455,025

Lockheed Martin Idaho Technologies Co.

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CONTINGENCY ANALYSIS

PROJECT NAME: ICPP Bin Set Closure (EIS Stud
Pipe Crawler (Risk Based Estim
LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
PROJECT NO: 2423-E
PREPARED BY: S. L. Coward

DATE: 27-Jan-1998
TIME: 20:52:30

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING	889,168	8.97	10	40	0.90	3.59	3.139%	8.97%	312,518	1,201,686
1.1.2	TITLE III INSPECTION	296,389	2.99	10	40	0.30	1.20	1.046%	2.99%	104,173	400,562
1.2.1	PROJECT MANAGEMENT	2,149,702	21.68	10	40	2.17	8.67	7.588%	21.68%	755,561	2,905,263
1.2.2	CONSTRUCTION MANAGEMENT	592,779	5.98	10	40	0.60	2.39	2.092%	5.98%	208,346	801,125
1.3.1	GENERAL CONDITIONS	1,831,085	18.47	10	40	1.85	7.39	6.464%	18.47%	643,576	2,474,661
1.3.13	SPECIAL CONSTRUCTION	4,096,709	41.32	10	40	4.13	16.53	14.461%	41.32%	1,439,881	5,536,590
1.5.2	PROCUREMENT FEES	59,278	0.60	10	40	0.06	0.24	0.209%	0.60%	20,835	80,113
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
SUBTOTAL		9,915,110	100.00					35.000%			
CALCULATED CONTINGENCY		3,470,289									
RESULTANT TEC		13,385,399									
ROUNDED TEC		13,400,000									
PROJECT CONTINGENCY		3,484,890						35.15%			
MANAGEMENT RESERVE		598,707									
CONTINGENCY		2,886,183									
TOTAL ESTIMATED COST		13,400,000								3,484,890	13,400,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE III/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLASS C FILL; UNESCALATED

CLEAN BINS W/ ROBOTS - PIPING

PROCUREMENT FEE:

CONSTRUCTION =	\$5,927,794	
GFE =		
Subtotal	\$5,927,794	
FEE @ 1% =	\$5,927,794 * 0.01 =	\$59,278

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 10 yrs)

CONSTRUCTION OR		
CEILING * 10 YEARS =	\$5,000,000	
GFE =	\$0	
PROCUREMENT FEE =	\$59,278	
Subtotal	\$5,059,278	
FEE @ 23% =	\$5,059,278 * 0.23 =	\$1,163,634

PIF @ 5.5%

CONSTRUCTION =	\$5,927,794	
GFE =	\$0	
PROCUREMENT FEE =	\$59,278	
G&A =	\$1,163,634	
Subtotal	\$7,150,706	
FEE @ 5.5% =	\$7,150,706 * 0.055 =	\$393,289

TOTAL PROCUREMENT FEE:	\$59,278
TOTAL G&A FEE:	\$1,163,634
TOTAL PIF:	\$393,289

Lockheed Martin Idaho Technologies Co.

Rev. 6-96

COST ESTIMATE SUMMARY

PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
Place NRC Class C Grout**
 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-B**
 PREPARED BY: **S. L. Coward**
 REPORT NAME: **Cost Estimate Summary**

DATE: **27-Jan-1998**
 TIME: **20:26:45**
 CHECKED BY:
 APPRD BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$3,939,045
1.1.1	DESIGN ENGINEERING TITLE I & II	3,282,538	0	3,282,538
1.1.2	TITLE III INSPECTION	656,507	0	656,507
1.2	<u>MANAGEMENT COSTS</u>			>> \$4,225,021
1.2.1	PROJECT MANAGEMENT	2,923,531	0	2,923,531
1.2.2	CONSTRUCTION MANAGEMENT	1,301,490	0	1,301,490
1.3	<u>CONSTRUCTION</u>			>> \$13,130,159
1.3.1	GENERAL CONDITIONS	3,437,150	0	3,437,150
1.3.2	SITWORK	0	0	0
1.3.3	CONCRETE	3,876,603	0	3,876,603
1.3.15	MECHANICAL	3,365,584	0	3,365,584
1.3.16	ELECTRICAL	2,450,822	0	2,450,822
1.5.2	PROCUREMENT FEES	131,302	0	>> \$131,302
	SUBTOTAL INCLUDING ESCALATION	21,425,527	0	>> \$21,425,527
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$1,326,146
	CONTINGENCY			>> \$7,348,327
	TOTAL ESTIMATED COST			>> \$30,100,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 30.00%

CONTINGENCY= 40.49%

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-B

PREPARED BY: S. L. Coward

PAGE # 1

DATE 27-Jan-1998

TIME: 20:26:47

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

PROJECT NAME: **ICPP Bin Set Closure (EIS Study)**

Place NRC Class C Grout

LOCATION 1: **ICPP**

REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-B

PREPARED BY: **S. L. Coward**

DATE 27-Jan-1998

TIME: 20:26:47

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

PROJECT NAME: **ICPP Bin Set Closure (EIS Study)**

Place NRC Class C Grout

LOCATION 1: ICPP

REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-B

PREPARED BY: **S. L. Coward**

DATE **27-Jan-1998**

TIME: 20:26:47

REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.3	CONCRETE PROCURE EQUIPMENT FOR PLACEMENT OF GROUT											
	Grout Booster Pump	1	EA	55,000.00	GEN	0.000				55,000		55,000
	Air Compressor and Miscellaneous Cleaning Equipment	1	LS	25,000.00	GEN	0.000				25,000		25,000
	Manipulator Boxes (2 Plus 1 Spare) Procurement	3	EA	350,000.00	GEN	0.000				1,050,000		1,050,000
	Manipulator Boxes Mobilization and Demobilization (2 per tank @ 50 tanks)	100	EA		CONC GEN	80.000	8,000	256,240				256,240
	GROUT DELIVERY PIPE SHIELDING (Includes 10% Waste)	3,367	LF	130.00	CONC GEN	0.200	673	21,569		437,710		459,279
	GROUT DELIVERY PIPE SHIELDING (Removal and Disposal (Incl. 10% Waste)	3,367	LF		CONC GEN	0.800	2,694	86,276				86,276
	POUR CLASS C GROUT AND CLEAN PIPE (Includes 10% Waste)	10,406	CY	0.28	CONC GEN	0.920	9,574	306,640		2,914		309,554
	CLEANING OF PIPING AFTER EACH LIFT	666	LIFTS	30.00	CONC GEN	0.500	333	10,666		19,980		30,646
	8" CAPS FOR PENETRATIONS (Assume 2 per bin)	100	EA	600.00	CONC GEN	24.000	2,400	76,872		60,000		126,872
	CONCRETE S/T						23,674	\$758,263		\$1,640,604		\$2,398,867
1.3.15	MECHANICAL											
	DOUBLE CONTAINED GROUT delivery pipe	3,367	LF	47.00	CONC GEN	1.200	4,040	129,414	10,101	168,249	13,468	311,232

[illegible]

Lockheed Martin Idaho Technologies Co.
Rev 6-96
PROJECT NAME: ICPP Bin Set Closure (EIS Study)
Place NRC Class C Grout
LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

DETAILED COST ESTIMATE SHEET
TYPE OF ESTIMATE: Planning
PROJECT NO.: 2423-B
PREPARED BY: S. L. Coward

PAGE # 5
DATE 27-Jan-1998
TIME: 20:26:47
REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.16	ELECTRICAL											
	ELECTRICAL S/T						8,700	\$278,661		\$1,260,000		\$1,538,661
	PROJECT SUBTOTAL						126,980	\$4,815,121	\$10,101	\$3,892,313	\$8,343,139	\$17,060,675

Lockheed Martin Idaho Technologies Co.

Rev 6-96

CONTINGENCY ANALYSIS

PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
Place NRC Class C Grout**
 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-B**
 PREPARED BY: **S. L. Coward**

DATE: **27-Jan-1998**
 TIME: **20:26:41**

 REPORT NAME: **Contingency Analysis**

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	3,282,538	15.32	10	40	1.53	6.13	5.362%	13.08%	1,134,503	4,417,041
1.1.2	TITLE III INSPECTION	656,507	3.06	10	40	0.31	1.23	1.072%	2.62%	226,900	883,407
1.2.1	PROJECT MANAGEMENT	2,923,531	13.65	10	40	1.36	5.46	4.776%	11.65%	1,010,424	3,933,955
1.2.2	CONSTRUCTION MANAGEMENT	1,301,490	6.07	10	40	0.61	2.43	2.126%	5.19%	449,818	1,751,308
1.3.1	GENERAL CONDITIONS	3,437,150	16.04	10	50	1.60	8.02	7.059%	17.22%	1,493,409	4,930,559
1.3.2	SITEWORK	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.3.3	CONCRETE	3,876,603	18.09	10	50	1.81	9.05	7.961%	19.42%	1,684,348	5,560,951
1.3.15	MECHANICAL	3,365,584	15.71	10	50	1.57	7.85	6.912%	16.86%	1,462,315	4,827,899
1.3.16	ELECTRICAL	2,450,822	11.44	10	50	1.14	5.72	5.033%	12.28%	1,064,859	3,515,681
1.5.2	PROCUREMENT FEES	131,302	0.61	10	40	0.06	0.25	0.214%	0.52%	45,380	176,682
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	102,517	102,517
SUBTOTAL		21,425,527	100.00					40.515%			
CALCULATED CONTINGENCY		8,680,649									
RESULTANT TEC		30,106,176									
ROUNDED TEC		30,100,000									
PROJECT CONTINGENCY		8,674,473						40.49%			
MANAGEMENT RESERVE		1,326,146									
CONTINGENCY		7,348,327									
TOTAL ESTIMATED COST		30,100,000								8,674,473	30,100,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLASS C FILL; UNESCALATED

FILL BINS W/ NRC CLASS C GROUT

PROCUREMENT FEE:

CONSTRUCTION =	\$13,130,159		
GFE =			
Subtotal	\$13,130,159		
FEE @ 1% =	\$13,130,159	* 0.01 =	\$131,302

G&A @ 23% (with a ceiling of \$500,000 imposed per year , 7 Years)

CONSTRUCTION OR			
CEILING * 7 YEARS =	\$3,500,000		
GFE =	\$0.		
PROCUREMENT FEE =	\$131,302		
Subtotal	\$3,631,302		
FEE @ 23% =	\$3,631,302	* 0.23 =	\$835,199

PIF @ 5.5%

CONSTRUCTION =	\$13,130,159		
GFE =	\$0		
PROCUREMENT FEE =	\$131,302		
G&A =	\$835,199		
Subtotal	\$14,096,660		
FEE @ 5.5% =	\$14,096,660	* 0.055 =	\$775,316

TOTAL PROCUREMENT FEE:	\$131,302
TOTAL G&A FEE:	\$835,199
TOTAL PIF:	\$775,316

Lockheed Martin Idaho Technologies Co.

Rev. 6-96

COST ESTIMATE SUMMARY

 PROJECT NAME: ICPP Bin Set Closure
 D&D of Equipment
 LOCATION 1: INEEL / ICPP
 REQUESTOR: B. C. Spaulding

 TYPE OF ESTIMATE: Planning
 PROJECT NO: 2423D&D
 PREPARED BY: S.L. Coward/smb
 REPORT NAME: Cost Estimate Summary

 DATE: 27-Jan-1998
 TIME: 19:33:11
 CHECKED BY:
 APPROD BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$0
1.1.1	DESIGN ENGINEERING TITLE I & II	0	0	0
1.1.2	TITLE III INSPECTION	0	0	0
1.2	<u>MANAGEMENT COSTS</u>			>> \$800,213
1.2.1	PROJECT MANAGEMENT	800,213	0	800,213
1.2.2	CONSTRUCTION MANAGEMENT	0	0	0
1.3	<u>CONSTRUCTION</u>			>> \$11,709,711
1.3.13	SPECIAL CONSTRUCTION	11,709,711	0	11,709,711
1.5.2	PROCUREMENT FEES	117,097	0	>> \$117,097
	SUBTOTAL INCLUDING ESCALATION	12,627,021	0	>> \$12,627,021
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$0
	CONTINGENCY			>> \$4,372,979
	TOTAL ESTIMATED COST			>> \$17,000,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 0.00%

CONTINGENCY= 34.63%

Rev 6 96

D&D of Equipment

B. C. Spaulding

QUESTION

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423D&D

PREPARED BY: S.L.Coward/smb

PAGE # 1

DATE 27-Jan-1998

TIME: 19:30:57

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423D&D

PREPARED BY: S.L.Coward/smb

PAGE # 2

DATE 27-Jan-1998

TIME: 19:30:57

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423D&D

PREPARED BY: S.L.Coward/smb

PAGE # 4

DATE 27-Jan-1998

TIME: 19:30:57

REPORT NAME: Detail Cost Estimate Sheet

DE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
13	SPECIAL CONSTRUCTION											
	Grouting Manifolds - Class C - Allowance - 8 ea @ 300 sf	1	lot			0.000					537,274	537,274
	LDUA's - Allowance - 7 ea @ 150 sf	1	lot			0.000					209,873	209,873
	Pipe Crawler Robots - Allowance - 7 ea @ 150 sf	1	lot			0.000					209,873	209,873
	Tractor Robots - Allowance - 53 ea @ 250 sf	1	lot			0.000					2,648,393	2,648,393
	Misc Robot Wire and Hose Lines - Allowance - 1 ea @ 1000 sf	1	lot			0.000					199,879	199,879
	Waste Disposal - quantities as stated in EDF											
	- Solid Waste	500	cf			0.000					540	540
	- Radioactive Waste	10,000	cf			0.000					3,000,000	3,000,000
	- Mixed Waste	2,200	cf			0.000					275,000	275,000
	SPECIAL CONSTRUCTION S/T						0				\$*,**,*	\$11,709,711
	PROJECT SUBTOTAL						0	\$0	\$0	\$0	\$12,609,924	\$12,609,924

CONTINGENCY ANALYSIS

PROJECT NAME: ICPP Bin Set Closure
D&D of Equipment
LOCATION 1: INEEL / ICPP
REQUESTOR: B. C. Spaulding

TYPE OF ESTIMATE: Planning
PROJECT NO: 2423D&D
PREPARED BY: S.L.Coward/smb

DATE: 27-Jan-1998
TIME: 19:33:04

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.1.2	TITLE III INSPECTION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.2.1	PROJECT MANAGEMENT	800,213	6.34	10	40	0.63	2.53	2.218%	6.34%	277,129	1,077,342
1.2.2	CONSTRUCTION MANAGEMENT	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.3.13	SPECIAL CONSTRUCTION	11,709,711	92.74	10	40	9.27	37.09	32.457%	92.74%	4,055,297	15,765,008
1.5.2	PROCUREMENT FEES	117,097	0.93	10	40	0.09	0.37	0.325%	0.93%	40,553	157,650
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
SUBTOTAL		12,627,021	100.00					35.000%			
CALCULATED CONTINGENCY		4,419,457									
RESULTANT TEC		17,046,478									
ROUNDED TEC		17,000,000									
PROJECT CONTINGENCY		4,372,979						34.63%			
MANAGEMENT RESERVE		0									
CONTINGENCY		4,372,979									
TOTAL ESTIMATED COST		17,000,000								4,372,979	17,000,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE III/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLASS C FILL; UNESCALATED

D&D OF EQUIPMENT

PROCUREMENT FEE:

CONSTRUCTION =	\$11,709,711	
GFE =		
Subtotal	\$11,709,711	
FEE @ 1% =	\$11,709,711 * 0.01 =	\$117,097

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 1 yr)

CONSTRUCTION OR		
CEILING * 1 YEARS =	\$500,000	
GFE =	\$0	
PROCUREMENT FEE =	\$117,097	
Subtotal	\$617,097	
FEE @ 23% =	\$617,097 * 0.23 =	\$141,932

PIF @ 5.5%

CONSTRUCTION =	\$11,709,711	
GFE =	\$0	
PROCUREMENT FEE =	\$117,097	
G&A =	\$141,932	
Subtotal	\$11,968,740	
FEE @ 5.5% =	\$11,968,740 * 0.055 =	\$658,281

TOTAL PROCUREMENT FEE:	\$117,097
TOTAL G&A FEE:	\$141,932
TOTAL PIF:	\$658,281

COST ESTIMATE SUMMARY
ESCALATED

ICPP BIN SET CLOSURE RISK BASED CLEAN CLOSURE CLASS C FILL Requestor: B. C. Spaulding	Planning Estimate Estimate #2423 Prepared by: S. L. Coward	<div>1/28/98</div> <div> Checked by: Approved by: </div>
<div>Regulatory Compliance 31,600,000</div> <div>Fill Vaults with Clean Grout 23,300,000</div> <div>Clean Bins with Robots</div> <div> Floor 258,700,000</div> <div> Walls 58,200,000</div> <div> Piping 27,100,000</div> <div>Fill Bins with NRC Class C Grout 64,700,000</div> <div>D&D of Equipment 50,600,000</div>	<div> TOTAL \$514,200,000 </div> <div> USE \$514,000,000 </div>	

Lockheed Martin Idaho Technologies Co.
COST ESTIMATE SUMMARY

Rev. 6-96

PROJECT NAME: **Permitting/Documentation
Risk Based - NRC Class C
INEEL/ICPP**
 LOCATION 1:
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **PLANNING**
 PROJECT NO: **2423-BD-E**
 PREPARED BY: **S. L. Coward**
 REPORT NAME: **Cost Estimate Summary**

DATE: **28-Jan-1998**
 TIME: **11:02:58**
 CHECKED BY: *SMB*

APPRD BY:

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
<u>1.1</u>	<u>CONCEPTUAL</u>			>> <u>\$0</u>
1.1.1	CONCEPTUAL DESIGN	0	0	0
<u>1.2</u>	<u>MANAGEMENT</u>			>> <u>\$3,800,720</u>
1.2.1	PM FOR PROJECT DEVELOPMENT	1,942,993	1,107,506	3,050,499
1.2.2	PROJECT EXECUTION	477,848	272,373	750,221
<u>1.3</u>	<u>PERMITTING</u>			>> <u>\$19,444,616</u>
1.3.1	PERMITTING	12,385,106	7,059,510	19,444,616
1.5.2	PROCUREMENT FEES	123,851	70,595	>> <u>\$194,446</u>
	SUBTOTAL INCLUDING ESCALATION	14,929,798	8,509,984	>> \$23,439,782
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$1,963,906
	CONTINGENCY			>> \$6,196,312
	TOTAL ESTIMATED COST			>> \$31,600,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 0.00%

CONTINGENCY= 34.81%

Rev 6-96

LOCATION 1: INEEL/ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: PLANNING

PROJECT NO.: 2423-BD-E

PREPARED BY: S. L. Coward

DATE 28-Jan-1998

TIME: 11:03:00

REPORT NAME: **Detail Cost Estimate Sheet**[illegible]

DETAILED COST ESTIMATE SHEET

PAGE # 2

Rev 6-96

PROJECT NAME: **Permitting/Documentation
Risk Based - NRC Class C**
 LOCATION 1: **INEEL/ICPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **PLANNING**
 PROJECT NO.: **2423-BD-E**
 PREPARED BY: **S. L. Coward**

DATE **28-Jan-1998**
 TIME: **11:03:00**
 REPORT NAME: **Detail Cost Estimate Sheet**

DE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.1	PERMITTING											
	RCRC Closure (Incl. Writing, Reviews, Public Comments & Issuance of Permits)	2	FTE		Z-1700 LIMITCO	1440.00	2,880	186,221				186,221
	Air Monitoring Activities, Fees, etc.	2	LS		LIMITCO	0.000					1,208,900	1,208,900
	P.E. Activities	1	LS		LIMITCO	0.000					60,000	60,000
	CAA Permit to Construct (Incl. Preparing, Reviews, Public comments & Issuance)	1	LS		Z-1700 LIMITCO	1800.00	1,800	116,388				116,388
	CERCLA Coordinator	2	FTE		Z-1700 LIMITCO	1500.00	3,000	193,980				193,980
	Regulatory Affairs Oversight	10	YR		Z-1700 LIMITCO	150.000	1,500	96,990				96,990
	Other Regulatory Compliance (CWA, Storm Water, Historical, etc.)	1	LS		Z-1700 LIMITCO	1000.00	1,000	64,660				64,660
	Survey Plat	1	LS		LIMITCO	0.000					10,000	10,000
	SARR	1	LS		Z-3170 LIMITCO	4500.00	4,500	312,255				312,255
	NRC Landfill Disposal Requirements	10	LS		Z-1710 LIMITCO	9000.00	90,000	4,960,800				4,960,800
	Environmental & Hazards Analysis	2	FTE		Z-1710 LIMITCO	1800.00	3,600	198,432				198,432
	Seismic Test Bores (Allowance)	20	HOLES		Z-1710 LIMITCO	2700.00	54,000	2,976,480				2,976,480
	Operational Readiness Review	1	LS		LIMITCO	0.000					2,000,000	2,000,000
	PERMITTING S/T						162,280	\$9,106,206			\$3,278,900	\$12,385,106
	PROJECT SUBTOTAL						<u>162,280</u>	<u>\$9,106,206</u>	<u>\$0</u>	<u>\$0</u>	<u>\$5,699,741</u>	<u>\$14,805,947</u>

Lockheed Martin Idaho Technologies Co.

Rev 6-96

CONTINGENCY ANALYSIS

PROJECT NAME: **Permitting/Documentation**
Risk Based - NRC Class C
 LOCATION 1: **INEEL/ICPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **PLANNING**
 PROJECT NO: **2423-BD-E**
 PREPARED BY: **S. L. Coward**

DATE: **28-Jan-1998**
 TIME: **11:02:47**

 REPORT NAME: **Contingency Analysis**

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	CONCEPTUAL DESIGN	0	0.00	10	40	0.00	0.00	0.000%	0.00%	0	0
1.2.1	PM FOR PROJECT DEVELOPMENT	1,942,993	8.29	10	40	0.83	3.32	2.901%	8.29%	676,425	2,619,418
1.2.2	PROJECT EXECUTION	477,848	2.04	10	40	0.20	0.82	0.714%	2.04%	166,356	644,204
1.3.1	PERMITTING	12,385,106	52.84	10	40	5.28	21.14	18.493%	52.84%	4,311,694	16,696,800
1.5.2	PROCUREMENT FEES	123,851	0.53	10	40	0.05	0.21	0.185%	0.53%	43,117	166,968
	ESCALATION	8,509,984	36.31	10	40	3.63	14.52	12.707%	36.31%	2,962,626	11,472,610
	SUBTOTAL	23,439,782	100.00					35.000%			
	CALCULATED CONTINGENCY	8,203,924									
	RESULTANT TEC	31,643,706									
	ROUNDED TEC	31,600,000									
	PROJECT CONTINGENCY	8,160,218						34.81%			
	MANAGEMENT RESERVE	1,963,906									
	CONTINGENCY	6,196,312									
	TOTAL ESTIMATED COST	31,600,000								8,160,218	31,600,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLASS C FILL; ESCALATED

REGULATORY COMPLIANCE

PROCUREMENT FEE:

CONSTRUCTION =	\$19,444,616	
GFE =		
Subtotal	\$19,444,616	
FEE @ 1% =	\$19,444,616 * 0.01 =	\$194,446

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 5 yrs)

CONSTRUCTION OR CEILING * 5 YEARS =	\$2,500,000	
GFE =	\$0	
PROCUREMENT FEE =	\$194,446	
Subtotal	\$2,694,446	
FEE @ 23% =	\$2,694,446 * 0.23 =	\$619,723

PIF @ 5.5%

CONSTRUCTION =	\$12,385,106	
GFE =	\$0	
PROCUREMENT FEE =	\$194,446	
G&A =	\$619,723	
Subtotal	\$13,199,275	
FEE @ 5.5% =	\$13,199,275 * 0.055 =	\$725,960

TOTAL PROCUREMENT FEE:	\$194,446
TOTAL G&A FEE:	\$619,723
TOTAL PIF:	\$725,960

Lockheed Martin Idaho Technologies Co.
COST ESTIMATE SUMMARY

Rev. 6-96
 PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
 Place Clean Grout in Vault**
 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-A2-E1**
 PREPARED BY: **S. L. Coward**
 REPORT NAME: **Cost Estimate Summary**

DATE: **28-Jan-1998**
 TIME: **11:59:17**
 CHECKED BY: **SNLB**
 APPRD BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$2,493,296
1.1.1	DESIGN ENGINEERING	1,324,812	649,158	1,973,970
1.1.2	TITLE III INSPECTION	264,962	254,364	519,326
1.2	<u>MANAGEMENT COSTS</u>			>> \$4,270,879
1.2.1	PROJECT MANAGEMENT	1,692,265	1,539,961	3,232,226
1.2.2	CONSTRUCTION MANAGEMENT	529,925	508,728	1,038,653
1.3	<u>CONSTRUCTION</u>			>> \$10,386,530
1.3.1	GENERAL CONDITIONS	1,067,791	1,025,079	2,092,870
1.3.2	SITWORK	0	0	0
1.3.3	CONCRETE	4,231,459	4,062,201	8,293,660
1.5.2	PROCUREMENT FEES	52,992	50,873	>> \$103,865
SUBTOTAL INCLUDING ESCALATION		9,164,206	8,090,364	>> \$17,254,570
PROJECT CONTINGENCY				
MANAGEMENT RESERVE				>> \$1,049,039
CONTINGENCY				>> \$4,996,391
TOTAL ESTIMATED COST				>> \$23,300,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= **24.00%**

CONTINGENCY= **35.04%**

TIME: 11:59:19

REPORT NAME: Detail Cost Estimate Sheet

REPORT NAME: Detail Cost Estimate Sheet

PREPARED BY: **S. L. Coward**

[illegible]

[illegible]

Rev 6-98

PROJECT NAME: **ICPP Bin Set Closure (EIS Study)**

Place Clean Grout in Vault

LOCATION 1: ICPP

REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-A2-E1

PREPARED BY: **S. L. Coward**

DATE 28-Jan-1998

TIME: 11:59:19

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

PROJECT NAME: ICPP Bin Set Closure (EIS Study)

Place Clean Grout in Vault

LOCATION 1: ICPP

REQUESTOR: Bryan Spaulding

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-A2-E1

PREPARED BY: S. L. Coward

PAGE # 4

DATE 28-Jan-1998

TIME: 11:59:19

REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.3.1 MEMO:	VAULT GROUTING Assume 4 tubes x 7 vaults plus 10% waste											
	GROUT PLACEMENT & CLEANUP (Includes 10% Waste)	22,946	CY	80.00	CONC GEN	0.350	8,031	257,236		1,835,680		2,092,916
	VAULT GROUTING S/T						9,093	\$291,236		\$1,843,480		\$2,134,716
1.3.3.2	BIN SET VAULT ACCESS HOLES CORE DRILL 18" HOLE THROUGH VAULT ROOF (4 PLACES/VAULT)	28	EA	1,000.00	CONC GEN	100.000	2,800	89,684		28,000		117,684
	SHIELDING AROUND VAULT HOLES	28	EA	5,000.00	CONC GEN	24.000	672	21,524		140,000		161,524
	CAP 18" DIAMETER HOLES	28	EA	1,800.00	CONC GEN	40.000	1,120	35,874		50,400		86,274
	BIN SET VAULT ACCESS HOLES S/T						4,592	\$147,082		\$218,400		\$365,482
	PROJECT SUBTOTAL						36,012	\$1,377,853	\$80,000	\$2,097,960	\$3,811,964	\$7,367,777

Lockheed Martin Idaho Technologies Co.

Rev 6-96

PROJECT NAME: ICPP Bin Set Closure (EIS Stud

Place Clean Grout in Vault

LOCATION 1: ICPP

REQUESTOR: Bryan Spaulding

CONTINGENCY ANALYSIS

 TYPE OF ESTIMATE: Planning
 PROJECT NO: 2423-A2-E1
 PREPARED BY: S. L. Coward

 DATE: 28-Jan-1998
 TIME: 11:58:53

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING	1,324,812	7.68	10	40	0.77	3.07	2.687%	7.68%	464,170	1,788,982
1.1.2	TITLE III INSPECTION	264,962	1.54	10	40	0.15	0.61	0.537%	1.54%	92,834	357,796
1.2.1	PROJECT MANAGEMENT	1,692,265	9.81	10	40	0.98	3.92	3.433%	9.81%	592,914	2,285,179
1.2.2	CONSTRUCTION MANAGEMENT	529,925	3.07	10	40	0.31	1.23	1.075%	3.07%	185,668	715,593
1.3.1	GENERAL CONDITIONS	1,067,791	6.19	10	40	0.62	2.48	2.166%	6.19%	374,119	1,441,910
1.3.2	SITWORK	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.3.3	CONCRETE	4,231,459	24.52	10	40	2.45	9.81	8.583%	24.52%	1,482,563	5,714,022
1.5.2	PROCUREMENT FEES	52,992	0.31	10	40	0.03	0.12	0.107%	0.31%	18,567	71,559
	ESCALATION	8,090,364	46.89	10	40	4.69	18.76	16.411%	46.89%	2,834,595	10,924,959
SUBTOTAL		17,254,570	100.00					35.000%			
CALCULATED CONTINGENCY		6,039,100									
RESULTANT TEC		23,293,670									
ROUNDED TEC		23,300,000									
PROJECT CONTINGENCY		6,045,430						35.04%			
MANAGEMENT RESERVE		1,049,039									
CONTINGENCY		4,996,391									
TOTAL ESTIMATED COST		23,300,000								6,045,430	23,300,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
 Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
 TITLE I 10% - 20%
 TITLE II 5% - 15%
 TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLASS C FILL; ESCALATED

FILL VAULTS W/ CLEAN GROUT

PROCUREMENT FEE:

CONSTRUCTION =	\$10,386,530		
GFE =			
Subtotal	\$10,386,530		
FEE @ 1% =	\$10,386,530	* 0.01 =	\$103,865

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 7 yrs)

CONSTRUCTION OR CEILING * 7 YEARS =	\$3,500,000		
GFE =	\$0		
PROCUREMENT FEE =	\$103,865		
Subtotal	\$3,603,865		
FEE @ 23% =	\$3,603,865	* 0.23 =	\$828,889

PIF @ 5.5%

CONSTRUCTION =	\$5,129,992		
GFE =	\$0		
PROCUREMENT FEE =	\$103,865		
G&A =	\$828,889		
Subtotal	\$6,062,746		
FEE @ 5.5% =	\$6,062,746	* 0.055 =	\$333,451

TOTAL PROCUREMENT FEE:	\$103,865
TOTAL G&A FEE:	\$828,889
TOTAL PIF:	\$333,451

Lockheed Martin Idaho Technologies Co.
COST ESTIMATE SUMMARY

Rev. 6-96

PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
Tractor (Risk Based Estimates)**
 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-C1-E2**
 PREPARED BY: **S. L. Coward**
 REPORT NAME: **Cost Estimate Summary**

DATE: **28-Jan-1998**
 TIME: **11:15:45**
 CHECKED BY: **JMLB**
 APPR'D BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$21,021,518
1.1.1	DESIGN ENGINEERING TITLE I & II	9,900,244	4,455,110	14,355,354
1.1.2	TITLE III INSPECTION	3,300,081	3,366,083	6,666,164
1.2	<u>MANAGEMENT COSTS</u>			>> \$35,947,378
1.2.1	PROJECT MANAGEMENT	11,840,340	10,774,709	22,615,049
1.2.2	CONSTRUCTION MANAGEMENT	6,600,163	6,732,166	13,332,329
1.3	<u>CONSTRUCTION</u>			>> \$133,323,293
1.3.1	GENERAL CONDITIONS	6,840,414	6,977,222	13,817,636
1.3.13	SPECIAL CONSTRUCTION	59,161,216	60,344,441	119,505,657
1.5.2	PROCUREMENT FEES	660,016	673,217	>> \$1,333,233
SUBTOTAL INCLUDING ESCALATION		98,302,474	93,322,948	>> \$191,625,422
PROJECT CONTINGENCY				
MANAGEMENT RESERVE				>> \$13,465,653
CONTINGENCY				>> \$53,608,925
TOTAL ESTIMATED COST				>> \$258,700,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 16.00%

CONTINGENCY= 35.00%

DATE 28-Jan-1998

REPORT NAME: **Detail Cost Estimate Sheet**

PREPARED BY: **S. L. Coward**

[illegible]

TYPE OF ESTIMATE: **Planning**
PROJECT NO.: **2423-C1-E2**
PREPARED BY: **S. L. Coward**

[illegible]

DETAILED COST ESTIMATE SHEET

Rev 6-96
 PROJECT NAME: ICPP Bin Set Closure (EIS Study)
 Tractor (Risk Based Estimates)
 LOCATION 1: ICPP
 REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
 PROJECT NO.: 2423-C1-E2
 PREPARED BY: S. L. Coward

DATE: 28-Jan-1998
 TIME: 11:15:47
 REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.13	SPECIAL CONSTRUCTION Design of Development of Modifications to Add'l Units	52	EA		GEN	0.000					1,300,000	1,300,000
	INSTALLATION OF CLEANING UNIT:											
	Install Robotic Units	50	EACH		SKWK GEN	160.000	8,000	264,880				264,880
	Install and Shield Unit Hose/Tubes (Mods, Electr., etc.) - Allowance	50	EA	5,000.00	SKWK GEN	160.000	8,000	264,880		250,000		514,880
	Systems Integration	1	LS		GEN	0.000					75,000	75,000
	CAP 18" DIAMETER HOLES	100	EA	1,800.00	SKWK GEN	40.000	4,000	132,440		180,000		312,440
	CAP 6" DIAMETER HOLES	100		500.00	SKWK GEN	24.000	2,400	79,464		50,000		129,464
	OPERATION OF CALCINE RETRIEVAL -	19	FTE		SKWK GEN	34590.0	657,210	21,760,223				21,760,223
	SPECIAL CONSTRUCTION S/T						679,610	\$22,501,887		\$480,000	\$*, ***, ***	\$40,356,887
	PROJECT SUBTOTAL						744,485	\$25,478,570	\$0	\$480,000	\$51,856,928	\$77,815,498

Lockheed Martin Idaho Technologies Co.

Rev 6-96

CONTINGENCY ANALYSIS

 PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
Tractor (Risk Based Estimates)**

 TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-C1-E2**
 PREPARED BY: **S. L. Coward**

 DATE: **28-Jan-1998**
 TIME: **11:15:42**

 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

 REPORT NAME: **Contingency Analysis**

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	9,900,244	5.17	10	40	0.52	2.07	1.808%	5.17%	3,465,379	13,365,623
1.1.2	TITLE III INSPECTION	3,300,081	1.72	10	40	0.17	0.69	0.603%	1.72%	1,155,126	4,455,207
1.2.1	PROJECT MANAGEMENT	11,840,340	6.18	10	40	0.62	2.47	2.163%	6.18%	4,144,470	15,984,810
1.2.2	CONSTRUCTION MANAGEMENT	6,600,163	3.44	10	40	0.34	1.38	1.206%	3.44%	2,310,253	8,910,416
1.3.1	GENERAL CONDITIONS	6,840,414	3.57	10	40	0.36	1.43	1.249%	3.57%	2,394,348	9,234,762
1.3.13	SPECIAL CONSTRUCTION	59,161,216	30.87	10	40	3.09	12.35	10.806%	30.87%	20,708,179	79,869,395
1.5.2	PROCUREMENT FEES	660,016	0.34	10	40	0.03	0.14	0.121%	0.34%	231,025	891,041
	ESCALATION	93,322,948	48.70	10	40	4.87	19.48	17.045%	48.70%	32,665,798	125,988,746
SUBTOTAL		191,625,422	100.00					35.000%			
CALCULATED CONTINGENCY		67,068,898									
RESULTANT TEC		258,694,320									
ROUNDED TEC		258,700,000									
PROJECT CONTINGENCY		67,074,578						35.00%			
MANAGEMENT RESERVE		13,465,653									
CONTINGENCY		53,608,925									
TOTAL ESTIMATED COST		258,700,000								67,074,578	258,700,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%

Experimental/Special Conditions.....Up to 50%

Conceptual 15% - 25%

Experimental/Special Conditions.....Up to 40%

TITLE I 10% - 20%

TITLE II 5% - 15%

TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLASS C FILL; ESCALATED
CLEAN BINS W/ ROBOTS - FLOOR

PROCUREMENT FEE:

CONSTRUCTION =	\$133,323,293	
GFE =		
Subtotal	<u>\$133,323,293</u>	
FEE @ 1% =	\$133,323,293 * 0.01 =	\$1,333,233

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 10 yrs)

CONSTRUCTION OR		
CEILING * 10 YEARS =	\$5,000,000	
GFE =	\$0	
PROCUREMENT FEE =	<u>\$1,333,233</u>	
Subtotal	<u>\$6,333,233</u>	
FEE @ 23% =	\$6,333,233 * 0.23 =	\$1,456,644

PIF @ 5.5%

CONSTRUCTION =	\$66,001,630	
GFE =	\$0	
PROCUREMENT FEE =	<u>\$1,333,233</u>	
G&A =	<u>\$1,456,644</u>	
Subtotal	<u>\$68,791,507</u>	
FEE @ 5.5% =	\$68,791,507 * 0.055 =	\$3,783,533

TOTAL PROCUREMENT FEE:	\$1,333,233
TOTAL G&A FEE:	\$1,456,644
TOTAL PIF:	\$3,783,533

Lockheed Martin Idaho Technologies Co.
COST ESTIMATE SUMMARY

Rev. 6-96
 PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
 LDUA (Risk Based Estimates)**
 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-D-E1**
 PREPARED BY: **S. L. Coward**
 REPORT NAME: **Cost Estimate Summary**

DATE: **28-Jan-1998**
 TIME: **11:25:28**
 CHECKED BY: **JMB**
 APPR'D BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> <u>\$4,382,322</u>
1.1.1	DESIGN ENGINEERING TITLE I & II	2,083,513	937,581	3,021,094
1.1.2	TITLE III INSPECTION	694,504	666,724	1,361,228
1.2	<u>MANAGEMENT COSTS</u>			>> <u>\$11,240,306</u>
1.2.1	PROJECT MANAGEMENT	3,447,249	2,964,634	6,411,883
1.2.2	CONSTRUCTION MANAGEMENT	2,463,481	2,364,942	4,828,423
1.3	<u>CONSTRUCTION</u>			>> <u>\$27,224,593</u>
1.3.1	GENERAL CONDITIONS	1,831,085	1,757,841	3,588,926
1.3.13	SPECIAL CONSTRUCTION	12,059,014	11,576,653	23,635,667
1.5.2	PROCUREMENT FEES	138,901	133,345	>> <u>\$272,246</u>
SUBTOTAL INCLUDING ESCALATION		22,717,747	20,401,720	>> <u>\$43,119,467</u>
PROJECT CONTINGENCY				
MANAGEMENT RESERVE				>> <u>\$2,749,684</u>
CONTINGENCY				>> <u>\$12,330,849</u>
TOTAL ESTIMATED COST				>> <u>\$58,200,000</u>

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 16.00%

CONTINGENCY= 34.97%

Rev 6-96

**PROJECT NAME: ICPP Bin Set Closure (EIS Study)
LDUA (Risk Based Estimates)**

LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: **Planning**
PROJECT NO.: **2423-D-E1**
PREPARED BY: **S. L. Coward**

DATE: 28-Jan-1998
TIME: 11:25:30
REPORT NAME: Detail Cost Estimate Sheet

[illegible]

LDUA (Risk Based Estimates)

PROJECT NO.: 2423-D-E1

DATE 28-Jan-1998

TIME: 11:25:30

PREPARED BY: S. L. Coward

REPORT NAME: **Detail Cost Estimate Sheet**

REQUESTOR: **Bryan Spaulding**

[illegible]

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-D-E1

PREPARED BY: S. L. Coward

PAGE # 3

DATE 28-Jan-1998

TIME: 11:25:30

REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.13	SPECIAL CONSTRUCTION											
	Design of Modifications for add'l Units	6	EA		GEN	0.000					450,000	450,000
	INSTALLATION OF CLEANING UNIT:											
	Install Robotic Units	50	EACH		SKWK GEN	200.000	10,000	331,100				331,100
	Install and Shield Unit Hose/Tubes (Mods, Electr., etc.) - Allowance	50	EA	5,000.00	SKWK GEN	200.000	10,000	331,100		250,000		581,100
	Systems Integration	1	LS		GEN	0.000					100,000	100,000
	Shielding and Retrieval Area	7	EA		GEN	0.000					350,000	350,000
	CAP 18" DIA. HOLES - ASSUME Holes were capped in Floor Estimate	50	EA		SKWK GEN	40.000	2,000	66,220				66,220
	CAP 6" DIAMETER HOLES - Assume Holes were capped in Floor Estimate	50	EA		SKWK GEN	24.000	1,200	39,732				39,732
	OPERATION OF CALCINE RETRIEVAL	19	FTE		SKWK GEN	828.000	15,732	520,887				520,887
	SPECIAL CONSTRUCTION S/T						38,932	\$1,289,039		\$250,000	\$8,450,000	\$9,989,039
	PROJECT SUBTOTAL						71,452	\$2,780,112	\$0	\$250,000	\$17,138,747	\$20,168,859

PROJECT NAME: ICPP Bin Set Closure (EIS Stud
LDUA (Risk Based Estimates)

TYPE OF ESTIMATE: Planning
PROJECT NO: 2423-D-E1
PREPARED BY: S. L. Coward

DATE: 28-Jan-1998
TIME: 11:25:25

LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	2,083,513	4.83	10	40	0.48	1.93	1.691%	4.83%	728,684	2,812,197
1.1.2	TITLE III INSPECTION	694,504	1.61	10	40	0.16	0.64	0.564%	1.61%	242,895	937,399
1.2.1	PROJECT MANAGEMENT	3,447,249	7.99	10	40	0.80	3.20	2.798%	7.99%	1,205,635	4,652,884
1.2.2	CONSTRUCTION MANAGEMENT	2,463,481	5.71	10	40	0.57	2.29	2.000%	5.71%	861,574	3,325,055
1.3.1	GENERAL CONDITIONS	1,831,085	4.25	10	40	0.42	1.70	1.486%	4.25%	640,401	2,471,486
1.3.13	SPECIAL CONSTRUCTION	12,059,014	27.97	10	40	2.80	11.19	9.788%	27.97%	4,217,500	16,276,514
1.5.2	PROCUREMENT FEES	138,901	0.32	10	40	0.03	0.13	0.113%	0.32%	48,579	187,480
	ESCALATION	20,401,720	47.31	10	40	4.73	18.93	16.560%	47.31%	7,135,265	27,536,985
	SUBTOTAL	43,119,467	100.00					35.000%			
	CALCULATED CONTINGENCY	15,091,813									
	RESULTANT TEC	58,211,280									
	ROUNDED TEC	58,200,000									
	PROJECT CONTINGENCY	15,080,533						34.97%			
	MANAGEMENT RESERVE	2,749,684									
	CONTINGENCY	12,330,849									
	TOTAL ESTIMATED COST	58,200,000								15,080,533	58,200,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE III/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLASS C FILL; ESCALATED

CLEAN BINS W/ ROBOTS - WALLS

PROCUREMENT FEE:

CONSTRUCTION =	\$27,224,593	
GFE =		
Subtotal	\$27,224,593	
FEE @ 1% =	\$27,224,593 * 0.01 =	\$272,246

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 10 yrs)

CONSTRUCTION OR CEILING * 10 YEARS =	\$5,000,000	
GFE =	\$0	
PROCUREMENT FEE =	\$272,246	
Subtotal	\$5,272,246	
FEE @ 23% =	\$5,272,246 * 0.23 =	\$1,212,617

PIF @ 5.5%

CONSTRUCTION =	\$13,890,099	
GFE =	\$0	
PROCUREMENT FEE =	\$272,246	
G&A =	\$1,212,617	
Subtotal	\$15,374,961	
FEE @ 5.5% =	\$15,374,961 * 0.055 =	\$845,623

TOTAL PROCUREMENT FEE:	\$272,246
TOTAL G&A FEE:	\$1,212,617
TOTAL PIF:	\$845,623

Lockheed Martin Idaho Technologies Co.
COST ESTIMATE SUMMARY

Rev. 6-96
 PROJECT NAME: ICPP Bin Set Closure (EIS Stud
 Pipe Crawler (Risk Based Estim
 LOCATION 1: ICPP
 REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
 PROJECT NO: 2423-E-E1
 PREPARED BY: S. L. Coward
 REPORT NAME: Cost Estimate Summary

DATE: 28-Jan-1998
 TIME: 11:28:25
 CHECKED BY: *SMB*
 APPR'D BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$3,159,509
1.1.1	DESIGN ENGINEERING	1,778,336	800,251	2,578,587
1.1.2	TITLE III INSPECTION	296,389	284,533	580,922
1.2	<u>MANAGEMENT COSTS</u>			>> \$5,191,797
1.2.1	PROJECT MANAGEMENT	2,166,640	1,863,310	4,029,950
1.2.2	CONSTRUCTION MANAGEMENT	592,779	569,068	1,161,847
1.3	<u>CONSTRUCTION</u>			>> \$11,618,475
1.3.1	GENERAL CONDITIONS	1,831,085	1,757,841	3,588,926
1.3.13	SPECIAL CONSTRUCTION	4,096,709	3,932,840	8,029,549
1.5.2	PROCUREMENT FEES	59,278	56,907	>> \$116,185
	SUBTOTAL INCLUDING ESCALATION	10,821,216	9,264,750	>> \$20,085,966
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$1,173,466
	CONTINGENCY			>> \$5,840,568
	TOTAL ESTIMATED COST			>> \$27,100,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 27.00%

CONTINGENCY= 34.92%

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning
PROJECT NO.: 2423-E-E1
PREPARED BY: S. L. Coward

PAGE # 1

DATE: 28-Jan-1998
TIME: 11:28:28
REPORT NAME: Detail Cost Estimate Sheet

[illegible]

[illegible]

PROJECT NAME: ICPP Bin Set Closure (EIS Study)
Pipe Crawler (Risk Based Estimates)

LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning
PROJECT NO.: 2423-E-E1
PREPARED BY: S. L. Coward

PAGE # 3

DATE 28-Jan-1998
TIME: 11:28:28
REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.13	SPECIAL CONSTRUCTION Design, Approvals, Mock-ups, Proof of Process, etc.											
	Fabrication of Additional units	6	EA		GEN	0.000					420,000	420,000
	Design of Modifications for add'l units	6	EA		GEN	0.000					90,000	90,000
	INSTALLATION OF PIPE CRAWLER											
	Install Robotic Units	50	EACH		SKWK GEN	180.000	9,000	297,990				297,990
	Install and Shield Unit Hose/Tubes (Mods, Electr., etc.) - Allowance	50	EA	5,000.00	SKWK GEN	180.000	9,000	297,990		250,000		547,990
	Systems Integration	1	LS		GEN	0.000					100,000	100,000
	Shielding and Retrieval Area	7			GEN	0.000					350,000	350,000
	CAP 18" DIAMETER HOLES - ASSUME Holes Capped in Floor Estimate	50	EA		SKWK GEN	40.000	2,000	66,220				66,220
	CAP 6" DIAMETER HOLES - ASSUME Holes Capped in Floor Estimate	50	EA		SKWK GEN	24.000	1,200	39,732				39,732
	OPERATION OF CALCINE RETRIEVAL	19	FTE		SKWK GEN	515.000	9,785	323,981				323,981
	SPECIAL CONSTRUCTION S/T						30,985	\$1,025,913		\$250,000	\$1,760,000	\$3,035,913
	PROJECT SUBTOTAL						<u>63,505</u>	<u>\$2,516,987</u>	<u>\$0</u>	<u>\$250,000</u>	<u>\$6,594,144</u>	<u>\$9,361,131</u>

Lockheed Martin Idaho Technologies Co.

Rev 6-96

CONTINGENCY ANALYSIS

PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
Pipe Crawler (Risk Based Estim**
 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-E-E1**
 PREPARED BY: **S. L. Coward**

DATE: **28-Jan-1998**
 TIME: **11:28:22**

 REPORT NAME: **Contingency Analysis**

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING	1,778,336	8.85	10	40	0.89	3.54	3.099%	8.85%	620,996	2,399,332
1.1.2	TITLE III INSPECTION	296,389	1.48	10	40	0.15	0.59	0.516%	1.48%	103,499	399,888
1.2.1	PROJECT MANAGEMENT	2,166,640	10.79	10	40	1.08	4.31	3.775%	10.79%	756,592	2,923,232
1.2.2	CONSTRUCTION MANAGEMENT	592,779	2.95	10	40	0.30	1.18	1.033%	2.95%	206,999	799,778
1.3.1	GENERAL CONDITIONS	1,831,085	9.12	10	40	0.91	3.65	3.191%	9.12%	639,416	2,470,501
1.3.13	SPECIAL CONSTRUCTION	4,096,709	20.40	10	40	2.04	8.16	7.139%	20.40%	1,430,574	5,527,283
1.5.2	PROCUREMENT FEES	59,278	0.30	10	40	0.03	0.12	0.103%	0.30%	20,700	79,978
	ESCALATION	9,264,750	46.13	10	40	4.61	18.45	16.144%	46.13%	3,235,258	12,500,008
	SUBTOTAL	20,085,966	100.00					35.000%			
	CALCULATED CONTINGENCY	7,030,088									
	RESULTANT TEC	27,116,054									
	ROUNDED TEC	27,100,000									
	PROJECT CONTINGENCY	7,014,034						34.92%			
	MANAGEMENT RESERVE	1,173,466									
	CONTINGENCY	5,840,568									
	TOTAL ESTIMATED COST	27,100,000								7,014,034	27,100,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%

Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%

TITLE I 10% - 20%

TITLE II 5% - 15%

TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLASS C FILL; ESCALATED

CLEAN BINS W/ ROBOTS - PIPING

PROCUREMENT FEE:

CONSTRUCTION =	\$11,618,475	
GFE =		
Subtotal	\$11,618,475	
FEE @ 1% =	\$11,618,475 * 0.01 =	\$116,185

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 10 yrs)

CONSTRUCTION OR		
CEILING * 10 YEARS =	\$5,000,000	
GFE =	\$0	
PROCUREMENT FEE =	\$116,185	
Subtotal	\$5,116,185	
FEE @ 23% =	\$5,116,185 * 0.23 =	\$1,176,722

PIF @ 5.5%

CONSTRUCTION =	\$5,927,794	
GFE =	\$0	
PROCUREMENT FEE =	\$116,185	
G&A =	\$1,176,722	
Subtotal	\$7,220,701	
FEE @ 5.5% =	\$7,220,701 * 0.055 =	\$397,139

TOTAL PROCUREMENT FEE:	\$116,185
TOTAL G&A FEE:	\$1,176,722
TOTAL PIF:	\$397,139

COST ESTIMATE SUMMARY

Rev. 6-96

PROJECT NAME: ICPP Bin Set Closure (EIS Stud
Place NRC Class C Grout
LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
PROJECT NO: 2423-B-E1
PREPARED BY: S. L. Coward
REPORT NAME: Cost Estimate Summary

DATE: 28-Jan-1998
TIME: 11:33:51
CHECKED BY: *SMB*

APPR'D BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$7,746,789
1.1.1	DESIGN ENGINEERING TITLE I & II	3,282,538	2,987,110	6,269,648
1.1.2	TITLE III INSPECTION	656,507	820,634	1,477,141
1.2	<u>MANAGEMENT COSTS</u>			>> \$9,437,874
1.2.1	PROJECT MANAGEMENT	2,972,384	3,537,137	6,509,521
1.2.2	CONSTRUCTION MANAGEMENT	1,301,490	1,626,863	2,928,353
1.3	<u>CONSTRUCTION</u>			>> \$29,542,856
1.3.1	GENERAL CONDITIONS	3,437,150	4,296,437	7,733,587
1.3.2	SITWORK	0	0	0
1.3.3	CONCRETE	3,876,603	4,845,753	8,722,356
1.3.15	MECHANICAL	3,365,584	4,206,980	7,572,564
1.3.16	ELECTRICAL	2,450,822	3,063,527	5,514,349
1.5.2	PROCUREMENT FEES	131,302	164,127	>> \$295,429
	SUBTOTAL INCLUDING ESCALATION	21,474,380	25,548,568	>> \$47,022,948
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$2,983,829
	CONTINGENCY			>> \$14,693,223
	TOTAL ESTIMATED COST			>> \$64,700,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 26.00%

CONTINGENCY= 37.59%

DATE 28-Jan-1998

TIME: 11:33:53

REPORT NAME: Detail Cost Estimate Sheet

PREPARED BY: **S. L. Coward**

[illegible]

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-B-E1

PREPARED BY: S. L. Coward

PAGE # 2

DATE 28-Jan-1998

TIME: 11:33:53

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-B-E1

PREPARED BY: S. L. Coward

PAGE # 3

DATE 28-Jan-1998

TIME: 11:33:53

REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.3	CONCRETE											
	PROCURE EQUIPMENT FOR PLACEMENT OF GROUT											
	Grout Booster Pump	1	EA	55,000.00	GEN	0.000				55,000		55,000
	Air Compressor and Miscellaneous Cleaning Equipment	1	LS	25,000.00	GEN	0.000				25,000		25,000
	Manipulator Boxes (2 Plus 1 Spare) Procurement	3	EA	350,000.00	GEN	0.000				1,050,000		1,050,000
	Manipulator Boxes Mobilization and Demobilization (2 per tank @ 50 tanks)	100	EA		CONC GEN	80.000	8,000	256,240				256,240
	GROUT DELIVERY PIPE SHIELDING (Includes 10% Waste)	3,367	LF	130.00	CONC GEN	0.200	673	21,569		437,710		459,279
	GROUT DELIVERY PIPE SHIELDING (Removal and Disposal (Incl. 10% Waste)	3,367	LF		CONC GEN	0.800	2,694	86,276				86,276
	POUR CLASS C GROUT AND CLEAN PIPE (Includes 10% Waste)	10,406	CY	0.28	CONC GEN	0.920	9,574	306,640		2,914		309,554
	CLEANING OF PIPING AFTER EACH LIFT	666	LIFTS	30.00	CONC GEN	0.500	333	10,666		19,980		30,646
	6" CAPS FOR PENETRATIONS (Assume 2 per bin)	100	EA	600.00	CONC GEN	24.000	2,400	76,872		50,000		126,872
	CONCRETE S/T						23,674	\$758,263		\$1,640,604		\$2,398,867
1.3.15	MECHANICAL											
	DOUBLE CONTAINED GROUT delivery pipe	3,367	LF	47.00	CONC GEN	1.200	4,040	129,414	10,101	158,249	13,468	311,232

DETAILED COST ESTIMATE SHEET

PAGE # 4

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-B-E1

PREPARED BY: S. L. Coward

DATE 28-Jan-1998

TIME: 11:33:53

REPORT NAME: Detail Cost Estimate Sheet

[illegible]

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-B-E1

PREPARED BY: S. L. Coward

PAGE # 5

DATE 28-Jan-1998

TIME: 11:33:53

REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.16	ELECTRICAL											
	ELECTRICAL S/T						8,700	\$278,661		\$1,260,000		\$1,538,661
	PROJECT SUBTOTAL						126,980	\$4,815,121	\$10,101	\$3,892,313	\$8,391,992	\$17,109,528

Lockheed Martin Idaho Technologies Co.

Rev 6-96

CONTINGENCY ANALYSIS

PROJECT NAME: ICPP Bin Set Closure (EIS Stud
 Place NRC Class C Grout
 LOCATION 1: ICPP
 REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
 PROJECT NO: 2423-B-E1
 PREPARED BY: S. L. Coward

DATE: 28-Jan-1998
 TIME: 11:33:48

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	3,282,538	6.98	10	40	0.70	2.79	2.443%	5.96%	1,053,402	4,335,940
1.1.2	TITLE III INSPECTION	656,507	1.40	10	40	0.14	0.56	0.489%	1.19%	210,680	867,187
1.2.1	PROJECT MANAGEMENT	2,972,384	6.32	10	40	0.63	2.53	2.212%	5.40%	953,870	3,926,254
1.2.2	CONSTRUCTION MANAGEMENT	1,301,490	2.77	10	40	0.28	1.11	0.969%	2.36%	417,662	1,719,152
1.3.1	GENERAL CONDITIONS	3,437,150	7.31	10	50	0.73	3.65	3.216%	7.84%	1,386,651	4,823,801
1.3.2	SITWORK	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.3.3	CONCRETE	3,876,603	8.24	10	50	0.82	4.12	3.627%	8.85%	1,563,940	5,440,543
1.3.15	MECHANICAL	3,365,584	7.16	10	50	0.72	3.58	3.149%	7.68%	1,357,779	4,723,363
1.3.16	ELECTRICAL	2,450,822	5.21	10	50	0.52	2.61	2.293%	5.59%	988,737	3,439,559
1.5.2	PROCUREMENT FEES	131,302	0.28	10	40	0.03	0.11	0.098%	0.24%	42,136	173,438
	ESCALATION	25,548,568	54.33	10	40	5.43	21.73	19.016%	46.38%	9,702,195	35,250,763
	SUBTOTAL	47,022,948	100.00					37.513%			
	CALCULATED CONTINGENCY	17,639,746									
	RESULTANT TEC	64,662,694									
	ROUNDED TEC	64,700,000									
	PROJECT CONTINGENCY	17,677,052						37.59%			
	MANAGEMENT RESERVE	2,983,829									
	CONTINGENCY	14,693,223									
	TOTAL ESTIMATED COST	64,700,000								17,677,052	64,700,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
 Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
 TITLE I 10% - 20%
 TITLE II 5% - 15%
 TITLE III/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLASS C FILL; ESCALATED

FILL BINS W/ NRC CLASS C GROUT

PROCUREMENT FEE:

CONSTRUCTION =	\$29,542,856	
GFE =		
Subtotal	\$29,542,856	
FEE @ 1% =	\$29,542,856 * 0.01 =	\$295,429

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 7 yrs)

CONSTRUCTION OR CEILING * 7 YEARS =	\$3,500,000	
GFE =	\$0	
PROCUREMENT FEE =	\$295,429	
Subtotal	\$3,795,429	
FEE @ 23% =	\$3,795,429 * 0.23 =	\$872,949

PIF @ 5.5%

CONSTRUCTION =	\$13,130,159	
GFE =	\$0	
PROCUREMENT FEE =	\$295,429	
G&A =	\$872,949	
Subtotal	\$14,298,536	
FEE @ 5.5% =	\$14,298,536 * 0.055 =	\$786,419

TOTAL PROCUREMENT FEE: \$295,429

TOTAL G&A FEE: \$872,949

TOTAL PIF: \$786,419

Lockheed Martin Idaho Technologies Co.

Rev. 6-96

PROJECT NAME: **ICPP Bin Set Closure
D&D of Equipment**
 LOCATION 1: **INEEL / ICPP**
 REQUESTOR: **B. C. Spaulding**

COST ESTIMATE SUMMARY

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423D&D**
 PREPARED BY: **S.L.Coward/smb**
 REPORT NAME: **Cost Estimate Summary**

DATE: **28-Jan-1998**
 TIME: **09:58:46**
 CHECKED BY: **SMB**
 APPRD BY:

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$0
1.1.1	DESIGN ENGINEERING TITLE I & II	0	0	0
1.1.2	TITLE III INSPECTION	0	0	0
1.2	<u>MANAGEMENT COSTS</u>			>> \$2,561,125
1.2.1	PROJECT MANAGEMENT	868,178	1,692,947	2,561,125
1.2.2	CONSTRUCTION MANAGEMENT	0	0	0
1.3	<u>CONSTRUCTION</u>			>> \$34,543,647
1.3.13	SPECIAL CONSTRUCTION	11,709,711	22,833,936	34,543,647
1.5.2	PROCUREMENT FEES	117,097	228,339	>> \$345,436
	SUBTOTAL INCLUDING ESCALATION	12,694,986	24,755,222	>> \$37,450,208
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$0
	CONTINGENCY			>> \$13,149,792
	TOTAL ESTIMATED COST			>> \$50,600,000

PROJECT COST PARAMETERS

 EDI AS A % OF CONST. + GFE= **0.00%**

 CONTINGENCY= **35.11%**

D&D of Equipment

REQUESTOR: **B. C. Spaulding**

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423D&D

PREPARED BY: **S.L.Coward/smb**

DATE 28-Jan-1998

TIME: 10:13:24

REPORT NAME: **Detail Cost Estimate Sheet**[illegible]

LOCATION 1: INEEL / ICPP
REQUESTOR: B. C. Spaulding

TYPE OF ESTIMATE: **Planning**
PROJECT NO.: **2423D&D**
PREPARED BY: **S.L.Coward/smb**

TIME: 10:13:24

REPORT NAME: Detail Cost Estimate Sheet

[illegible]

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423D&D

PREPARED BY: S.L.Coward/smb

PAGE # 3

DATE 28-Jan-1988

TIME: 10:13:24

REPORT NAME: Detail Cost Estimate Sheet

[illegible]

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423D&D

PREPARED BY: S.L.Coward/smb

DATE 28-Jan-1998

TIME: 10:13:24

REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
3.13	SPECIAL CONSTRUCTION											
	Grouting Manifolds - Class C - Allowance - 8 ea @ 300 sf	1	lot			0.000					537,274	537,274
	LDUA's - Allowance - 7 ea @ 150 sf	1	lot			0.000					209,873	209,873
	Pipe Crawler Robots - Allowance - 7 ea @ 150 sf	1	lot			0.000					209,873	209,873
	Tractor Robots - Allowance - 53 ea @ 250 sf	1	lot			0.000					2,648,393	2,648,393
	Misc Robot Wire and Hose Lines - Allowance - 1 ea @ 1000 sf	1	lot			0.000					199,879	199,879
	Waste Disposal - quantities as stated in EDF											
	- Solid Waste	500	cf			0.000					540	540
	- Radioactive Waste	10,000	cf			0.000					3,000,000	3,000,000
	- Mixed Waste	2,200	cf			0.000					275,000	275,000
	SPECIAL CONSTRUCTION S/T						0				\$*,***,***	\$11,709,711
	PROJECT SUBTOTAL						0	\$0	\$0	\$0	\$12,577,889	\$12,577,889

Lockheed Martin Idaho Technologies Co.

Rev 6-96

CONTINGENCY ANALYSIS

PROJECT NAME: **ICPP Bin Set Closure
D&D of Equipment**
 LOCATION 1: **INEEL / ICPP**
 REQUESTOR: **B. C. Spaulding**

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423D&D**
 PREPARED BY: **S.L.Coward/smb**

DATE: **28-Jan-1998**
 TIME: **09:58:43**

 REPORT NAME: **Contingency Analysis**

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.1.2	TITLE III INSPECTION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.2.1	PROJECT MANAGEMENT	868,178	2.32	10	40	0.23	0.93	0.811%	2.32%	304,841	1,173,019
1.2.2	CONSTRUCTION MANAGEMENT	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.3.13	SPECIAL CONSTRUCTION	11,709,711	31.27	10	40	3.13	12.51	10.944%	31.27%	4,111,600	15,821,311
1.5.2	PROCUREMENT FEES	117,097	0.31	10	40	0.03	0.13	0.109%	0.31%	41,116	158,213
	ESCALATION	24,755,222	66.10	10	40	6.61	26.44	23.136%	66.10%	8,692,235	33,447,457
SUBTOTAL		37,450,208	100.00					35.000%			
CALCULATED CONTINGENCY		13,107,573									
RESULTANT TEC		50,557,781									
ROUNDED TEC		50,600,000									
PROJECT CONTINGENCY		13,149,792						35.11%			
MANAGEMENT RESERVE		0									
CONTINGENCY		13,149,792									
TOTAL ESTIMATED COST		50,600,000								13,149,792	50,600,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE III/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLASS C FILL; ESCALATED

D&D OF EQUIPMENT

PROCUREMENT FEE:

CONSTRUCTION =	\$34,543,647	
GFE =		
Subtotal	<u>\$34,543,647</u>	
FEE @ 1% =	\$34,543,647 * 0.01 =	\$345,436

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 1 yr)

CONSTRUCTION OR		
CEILING * 1 YEARS =	\$500,000	
GFE =	\$0	
PROCUREMENT FEE =	<u>\$345,436</u>	
Subtotal	<u>\$845,436</u>	
FEE @ 23% =	\$845,436 * 0.23 =	\$194,450

PIF @ 5.5%

CONSTRUCTION =	\$11,709,711	
GFE =	\$0	
PROCUREMENT FEE =	\$345,436	
G&A =	<u>\$194,450</u>	
Subtotal	<u>\$12,249,598</u>	
FEE @ 5.5% =	\$12,249,598 * 0.055 =	\$673,728

TOTAL PROCUREMENT FEE:	\$345,436
TOTAL G&A FEE:	\$194,450
TOTAL PIF:	\$673,728

CLOSURE -
GROUT

COST ESTIMATE SUMMARY
UNESCALATED

ICPP BIN SET CLOSURE RISK BASED CLEAN CLOSURE CLEAN FILL Requestor: B. C. Spaulding	Planning Estimate Estimate #2423 Prepared by: S. L. Coward	<div style="text-align: right;">1/28/98</div> Checked by: Approved by:
Regulatory Compliance	6,300,000	
Fill Vaults with Clean Grout	12,400,000	
Clean Bins with Robots		
Floor	132,400,000	
Walls	30,600,000	
Piping	13,400,000	
Fill Bins with Clean Grout	14,600,000	
D&D of Equipment	17,000,000	
TOTAL	\$226,700,000	
	USE	\$227,000,000

RISK BASED CLEAN CLOSURE -- 'CLEAN' GROUT

DESCRIPTION	BIN SET #1	BIN SET #5	BIN SET #6	BIN SET #2	BIN SET #7	BIN SET #4	BIN SET #3
Scheduled Retrieval Completion	(1/1/14)	(3/1/18)	(8/1/22)	(2/1/27)	(2/1/27)	(2/1/29)	(10/1/31)

ASSUME: Wait 1 Year until Start of Closure

Permitting (3 Years) 1/1/12-1/1/15

Grout Vaults "Clean" (Assume 1 Year)

ED&I (2 Yrs)	1/1/13-1/1/15						
Management	1/1/13-10/1/33						
Construction	1/1/15-1/1/16	3/1/19-3/1/20	8/1/23-8/1/24	2/1/28-2/1/29	2/1/28-2/1/29	2/1/30-2/1/31	10/1/32-10/1/33

Clean Bin Walls/Piping with Robot (3 Months) (15 Months) (24 Months) (13 Months) (25 Months) (7 Months) (17 Months)

ED&I (4 Yrs)	1/1/11-1/1/15						
Management	1/1/11-3/1/34						
Construction	1/1/15-4/1/15	3/1/19-6/1/20	8/1/23-8/1/25	2/1/28-3/1/29	2/1/28-3/1/30	2/1/30-9/1/30	10/1/32-3/1/34

Clean Bin Floors with Robot (3 Months) (15 Months) (24 Months) (13 Months) (25 Months) (7 Months) (17 Months)

ED&I (4 Yrs)	4/1/11-4/1/15						
Management	4/1/11-8/1/35						
Construction	4/1/15-7/1/15	6/1/20-9/1/21	8/1/25-8/1/27	3/1/29-4/1/30	3/1/30-4/1/32	9/1/30-4/1/31	3/1/34-8/1/35

RCRA CLOSURE

Grout Bins "Clean" (3 Months) (7 Months) (9 Months) (6 Months) (9 Months) (4 Months) (7 Months)

ED&I (3 Yrs)	7/1/12-7/1/15						
Management	7/1/12-8/1/36						
Construction	7/1/15-10/1/15	9/1/21-4/1/22	8/1/27-5/1/28	4/1/30-10/1/30	4/1/32-1/1/33	4/1/31-8/1/31	8/1/35-3/1/36

ASSUMPTIONS:

- More than 1 crew could be utilized simultaneously for pouring the "clean" grout into the vaults.
- More than 1 crew could be utilized simultaneously for cleaning the separate bins. However, cleaning of the floors will require scheduling after cleaning the walls/piping.
- Installation of "clean" grout into vaults will average 1 year per vault.
- Cleaning of bin floors are based on individual bin pro-rated calcine retrieval volumes to total volume. These schedules assume mob/demob, installation of robotic units, and any modifications of bins will be completed and bins will be ready for retrieval.
- Because of the difficulty of cleaning of bin walls/piping, it was assumed that it would take the same duration as the cleaning of the bin floors for each bin. These schedules assume mobilization/demobilization and any modifications of bins will be completed, and bins will be ready for retrieval.
- Durations for cleaning of bins are based on dual-rated calcine retrieval volume to the total volume as the basis.

COST ESTIMATE SUMMARY

Rev. 6-96

PROJECT NAME: Permitting/Documentation
Risk Based - Clean
LOCATION 1: INEEL/ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: PLANNING
PROJECT NO: 2423-A1 D
PREPARED BY: S. L. Coward
REPORT NAME: Cost Estimate Summary

DATE: 27-Jan-1998
TIME: 19:00:52
CHECKED BY:
APPR'D BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
<u>1.1</u>	<u>CONCEPTUAL</u>			>> \$0
1.1.1	CONCEPTUAL DESIGN	0	0	0
<u>1.2</u>	<u>MANAGEMENT</u>			>> \$917,792
1.2.1	PM FOR PROJECT DEVELOPMENT	768,088	0	768,088
1.2.2	PROJECT EXECUTION	149,704	0	149,704
<u>1.3</u>	<u>PERMITTING</u>			>> \$3,742,601
1.3.1	PERMITTING	3,742,601	0	3,742,601
1.5.2	PROCUREMENT FEES	37,426	0	>> \$37,426
	SUBTOTAL INCLUDING ESCALATION	4,697,819	0	>> \$4,697,819
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$378,003
	CONTINGENCY			>> \$1,224,178
	TOTAL ESTIMATED COST			>> \$6,300,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 0.00%

CONTINGENCY= 34.10%

Rev 6-98

**PROJECT NAME: Permitting/Documentation
Risk Based - Clean**

TYPE OF ESTIMATE: PLANNING

PROJECT NO.: 2423-A1 D

PREPARED BY: S. L. Coward

DATE 27-Jan-1998

TIME: 19:01:02

REPORT NAME: Detail Cost Estimate Sheet

LOCATION 1: INEEL/ICPP
REQUESTOR: Bryan Spaulding

[illegible]

DETAILED COST ESTIMATE SHEET

PAGE # 2

PROJECT NAME: Permitting/Documentation

Risk Based - Clean

TYPE OF ESTIMATE: PLANNING

PROJECT NO.: 2423-A1 D

DATE 27-Jan-1998

TIME: 19:01:02

LOCATION 1: INEEL/ICPP

PREPARED BY: S. L. Coward

REPORT NAME: Detail Cost Estimate Sheet

REQUESTOR: Bryan Spaulding

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.2.1.2	PROJECT SUPPORT											
	PROJECT SUPPORT S/T						0				\$149,704	\$149,704
1.3.1	PERMITTING											
	PERMITTING AND DOCUMENTATION	1				0.000						
	Air Monitoring Activities, Fees, etc.	1	LS			0.000					770,000	770,000
	RCRC Closure (Incl. Writing, Reviews, Public Comments & Issuance of Permits)	2	FTE		LIMITCO Z-1700 LIMITCO	1440.00	2,880	186,221				186,221
	P.E. Activities	1	LS			0.000					60,000	60,000
	CAA Permit to Construct (Incl. Preparing, Reviews, Public comments & Issuance)	1	LS		LIMITCO Z-1700 LIMITCO	1800.00	1,800	116,388				116,388
	CERCLA Coordinator	2	FTE			1500.00	3,000	193,980				193,980
	Regulatory Affairs Oversight	3	YR		LIMITCO Z-1700 LIMITCO	150.000	450	29,097				29,097
	Other Regulatory Compliance (CWA, Storm Water, Historical, etc.)	1	LS		LIMITCO Z-1700 LIMITCO	1000.00	1,000	64,660				64,660
	Survey Plat	1	LS			0.000					10,000	10,000
	SARR	1	LS		LIMITCO Z-3170 LIMITCO	4500.00	4,500	312,255				312,255
	Operational Readiness Review	1	LS			0.000					2,000,000	2,000,000
					LIMITCO							
	PERMITTING S/T						13,630	\$902,601			\$2,840,000	\$3,742,601

Lockheed Martin Idaho Technologies Co.

DETAILED COST ESTIMATE SHEET

PAGE # 3

Rev 6-96
 PROJECT NAME: Permitting/Documentation
 Risk Based - Clean
 LOCATION 1: INEEL/ICPP
 REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: PLANNING
 PROJECT NO.: 2423-A1 D
 PREPARED BY: S. L. Coward

DATE 27-Jan-1998
 TIME: 19:01:02
 REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	SIC (OTHER 1)	TOTAL COST
	PROJECT SUBTOTAL						13,630	\$902,601	\$0	\$0	\$3,757,792	\$4,660,393

Lockheed Martin Idaho Technologies Co.

Rev 6-96

CONTINGENCY ANALYSIS

PROJECT NAME: **Permitting/Documentation
Risk Based - Clean**
 LOCATION 1: **INEL/ICPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **PLANNING**
 PROJECT NO: **2423-A1 D**
 PREPARED BY: **S. L. Coward**

DATE: **27-Jan-1998**
 TIME: **19:00:49**

 REPORT NAME: **Contingency Analysis**

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	CONCEPTUAL DESIGN	0	0.00	10	40	0.00	0.00	0.000%	0.00%	0	0
1.2.1	PM FOR PROJECT DEVELOPMENT	768,088	16.35	10	40	1.63	6.54	5.722%	16.35%	261,955	1,030,043
1.2.2	PROJECT EXECUTION	149,704	3.19	10	40	0.32	1.27	1.115%	3.19%	51,056	200,760
1.3.1	PERMITTING	3,742,601	79.67	10	40	7.97	31.87	27.883%	79.67%	1,276,406	5,019,007
1.5.2	PROCUREMENT FEES	37,426	0.80	10	40	0.08	0.32	0.279%	0.80%	12,764	50,190
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
SUBTOTAL		4,697,819	100.00					35.000%			
CALCULATED CONTINGENCY		1,644,237									
RESULTANT TEC		6,342,056									
ROUNDED TEC		6,300,000									
PROJECT CONTINGENCY		1,602,181						34.10%			
MANAGEMENT RESERVE		378,003									
CONTINGENCY		1,224,178									
TOTAL ESTIMATED COST		6,300,000								1,602,181	6,300,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
 Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLEAN FILL; UNESCALATED

REGULATORY COMPLIANCE

PROCUREMENT FEE:

CONSTRUCTION =	\$3,742,601		
GFE =			
Subtotal	\$3,742,601		
FEE @ 1% =	\$3,742,601	* 0.01 =	\$37,426

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 3 yrs)

CONSTRUCTION OR			
CEILING * 3 YEARS =	\$1,500,000		
GFE =	\$0		
PROCUREMENT FEE =	\$37,426		
Subtotal	\$1,537,426		
FEE @ 23% =	\$1,537,426	* 0.23 =	\$353,608

PIF @ 5.5%

CONSTRUCTION =	\$3,742,601		
GFE =	\$0		
PROCUREMENT FEE =	\$37,426		
G&A =	\$353,608		
Subtotal	\$4,133,635		
FEE @ 5.5% =	\$4,133,635	* 0.055 =	\$227,350

TOTAL PROCUREMENT FEE: \$37,426

TOTAL G&A FEE: \$353,608

TOTAL PIF: \$227,350

COST ESTIMATE SUMMARY

PROJECT NAME: ICPP Bin Set Closure (EIS Stud
Place Clean Grout in Vault
LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
PROJECT NO: 2423-A2
PREPARED BY: S. L. Coward
REPORT NAME: Cost Estimate Summary

DATE: 27-Jan-1998
TIME: 19:06:11
CHECKED BY:
APPRD BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
<u>1.1</u>	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> <u>\$1,589,774</u>
1.1.1	DESIGN ENGINEERING	1,324,812	0	1,324,812
1.1.2	TITLE III INSPECTION	264,962	0	264,962
<u>1.2</u>	<u>MANAGEMENT COSTS</u>			>> <u>\$2,216,357</u>
1.2.1	PROJECT MANAGEMENT	1,686,432	0	1,686,432
1.2.2	CONSTRUCTION MANAGEMENT	529,925	0	529,925
<u>1.3</u>	<u>CONSTRUCTION</u>			>> <u>\$5,299,250</u>
1.3.1	GENERAL CONDITIONS	1,067,791	0	1,067,791
1.3.2	SITWORK	0	0	0
1.3.3	CONCRETE	4,231,459	0	4,231,459
1.5.2	PROCUREMENT FEES	52,992	0	>> <u>\$52,992</u>
	SUBTOTAL INCLUDING ESCALATION	9,158,373	0	>> \$9,158,373
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$535,224
	CONTINGENCY			>> \$2,706,403
	TOTAL ESTIMATED COST			>> \$12,400,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 30.00%

CONTINGENCY= 35.40%

REQUESTOR: **Bryan Spaulding**

[illegible]

[illegible]

DATE 27-Jan-1998

REPORT NAME: Detail Cost Estimate Sheet

REQUESTOR: **Bryan Spaulding**

34.000

DETAILED COST ESTIMATE SHEET

PROJECT NAME: ICPP Bin Set Closure (EIS Study)

TYPE OF ESTIMATE: Planning

DATE 27-Jan-1998

LOCATION 1: ICPP

PROJECT NO.: 2423-A2

TIME: 19:06:13

REQUESTOR: Bryan Spaulding

PREPARED BY: S. L. Coward

REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.3.1 MEMO:	VAULT GROUTING Assume 4 tubes x 7 vaults plus 10% waste											
	GROUT PLACEMENT & CLEANUP (Includes 10% Waste)	22,946	CY	80.00	CONC GEN	0.360	8,031	257,236		1,835,680		2,092,916
	VAULT GROUTING S/T						9,093	\$291,236		\$1,843,480		\$2,134,716
1.3.3.2	BIN SET VAULT ACCESS HOLES CORE DRILL 18" HOLE THROUGH VAULT ROOF (4 PLACES/VAULT)	28	EA	1,000.00	CONC GEN	100.000	2,800	89,684		28,000		117,684
	SHIELDING AROUND VAULT HOLES	28	EA	5,000.00	CONC GEN	24.000	672	21,524		140,000		161,524
	CAP 18" DIAMETER HOLES	28	EA	1,800.00	CONC GEN	40.000	1,120	35,874		50,400		86,274
	BIN SET VAULT ACCESS HOLES S/T						4,592	\$147,082		\$218,400		\$365,482
	PROJECT SUBTOTAL						<u>38,012</u>	<u>\$1,377,853</u>	<u>\$80,000</u>	<u>\$2,097,960</u>	<u>\$3,806,131</u>	<u>\$7,361,944</u>

PROJECT NAME: ICPP Bin Set Closure (EIS Stud
Place Clean Grout in Vault

TYPE OF ESTIMATE: Planning
PROJECT NO: 2423-A2
PREPARED BY: S. L. Coward

DATE: 27-Jan-1998
TIME: 19:06:07

LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING	1,324,812	14.47	10	40	1.45	5.79	5.063%	14.47%	468,920	1,793,732
1.1.2	TITLE III INSPECTION	264,962	2.89	10	40	0.29	1.16	1.013%	2.89%	93,784	358,746
1.2.1	PROJECT MANAGEMENT	1,686,432	18.41	10	40	1.84	7.37	6.445%	18.41%	596,916	2,283,348
1.2.2	CONSTRUCTION MANAGEMENT	529,925	5.79	10	40	0.58	2.31	2.025%	5.79%	187,568	717,493
1.3.1	GENERAL CONDITIONS	1,067,791	11.66	10	40	1.17	4.66	4.081%	11.66%	377,947	1,445,738
1.3.2	SITWORK	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.3.3	CONCRETE	4,231,459	46.20	10	40	4.62	18.48	16.171%	46.20%	1,497,735	5,729,194
1.5.2	PROCUREMENT FEES	52,992	0.58	10	40	0.06	0.23	0.203%	0.58%	18,757	71,749
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
SUBTOTAL		9,158,373	100.00					35.000%			
CALCULATED CONTINGENCY		3,205,431									
RESULTANT TEC		12,363,804									
ROUNDED TEC		12,400,000									
PROJECT CONTINGENCY		3,241,627						35.40%			
MANAGEMENT RESERVE		535,224									
CONTINGENCY		2,706,403									
TOTAL ESTIMATED COST		12,400,000								3,241,627	12,400,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLEAN FILL; UNESCALATED

FILL VAULTS W/ CLEAN GROUT

PROCUREMENT FEE:

CONSTRUCTION =	\$5,299,250	
GFE =		
Subtotal	\$5,299,250	
FEE @ 1% =	\$5,299,250 * 0.01 =	\$52,993

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 7 yrs)

CONSTRUCTION OR		
CEILING * 7 YEARS =	\$3,500,000	
GFE =	\$0	
PROCUREMENT FEE =	\$52,993	
Subtotal	\$3,552,993	
FEE @ 23% =	\$3,552,993 * 0.23 =	\$817,188

PIF @ 5.5%

CONSTRUCTION =	\$5,299,250	
GFE =	\$0	
PROCUREMENT FEE =	\$52,993	
G&A =	\$817,188	
Subtotal	\$6,169,431	
FEE @ 5.5% =	\$6,169,431 * 0.055 =	\$339,319

TOTAL PROCUREMENT FEE:	\$52,993
TOTAL G&A FEE:	\$817,188
TOTAL PIF:	\$339,319

COST ESTIMATE SUMMARY

Rev. 6-96

PROJECT NAME: ICPP Bin Set Closure (EIS Stud
Tractor (Risk Based Estimates)

TYPE OF ESTIMATE: Planning

PROJECT NO: 2423-C1

LOCATION 1: ICPP

PREPARED BY: S. L. Coward

REQUESTOR: Bryan Spaulding

REPORT NAME: Cost Estimate Summary

DATE: 27-Jan-1998

TIME: 20:42:03

CHECKED BY:

APPRD BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$13,200,325
1.1.1	DESIGN ENGINEERING TITLE I & II	9,900,244	0	9,900,244
1.1.2	TITLE III INSPECTION	3,300,081	0	3,300,081
1.2	<u>MANAGEMENT COSTS</u>			>> \$18,240,120
1.2.1	PROJECT MANAGEMENT	11,639,957	0	11,639,957
1.2.2	CONSTRUCTION MANAGEMENT	6,600,163	0	6,600,163
1.3	<u>CONSTRUCTION</u>			>> \$66,001,630
1.3.1	GENERAL CONDITIONS	6,840,414	0	6,840,414
1.3.13	SPECIAL CONSTRUCTION	59,161,216	0	59,161,216
1.5.2	PROCUREMENT FEES	660,016	0	>> \$660,016
	SUBTOTAL INCLUDING ESCALATION	98,102,091	0	>> \$98,102,091
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$6,666,165
	CONTINGENCY			>> \$27,631,744
	TOTAL ESTIMATED COST			>> \$132,400,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 20.00%

CONTINGENCY= 34.96%

DATE 27-Jan-1998

REPORT NAME: Detail Cost Estimate Sheet

PREPARED BY: **S. L. Coward**

[illegible]

TYPE OF ESTIMATE: **Planning**
PROJECT NO.: **2423-C1**
PREPARED BY: **S. L. Coward**

PAGE # 2

DATE 27-Jan-1998

TIME: 20:42:05

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

Lockheed Martin Idaho Technologies Co.
 Rev 6-96
 PROJECT NAME: **ICPP Bin Set Closure (EIS Study)**
 Tractor (Risk Based Estimates)
 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

DETAILED COST ESTIMATE SHEET

 TYPE OF ESTIMATE: **Planning**
 PROJECT NO.: **2423-C1**
 PREPARED BY: **S. L. Coward**

PAGE # **3**

 DATE **27-Jan-1998**
 TIME: **20:42:05**
 REPORT NAME: **Detail Cost Estimate Sheet**

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.13	SPECIAL CONSTRUCTION											
	Design of Development of Modifications to Add'l Units	52	EA		GEN	0.000					1,300,000	1,300,000
	INSTALLATION OF CLEANING UNIT:											
	Install Robotic Units	50	EACH		SKWK GEN	160.000	8,000	264,880				264,880
	Install and Shield Unit Hose/Tubes (Mods, Electr., etc.) - Allowance	50	EA	5,000.00	SKWK GEN	160.000	8,000	264,880		250,000		514,880
	Systems Integration	1	LS		GEN	0.000					75,000	75,000
	CAP 18" DIAMETER HOLES	100	EA	1,800.00	SKWK GEN	40.000	4,000	132,440		180,000		312,440
	CAP 6" DIAMETER HOLES	100		500.00	SKWK GEN	24.000	2,400	79,464		50,000		129,464
	OPERATION OF CALCINE RETRIEVAL -	19	FTE		SKWK GEN	34590.0	657,210	21,760,223				21,760,223
	SPECIAL CONSTRUCTION S/T						679,610	\$22,501,887		\$480,000	\$*,***,***	\$40,356,887
	PROJECT SUBTOTAL						744,485	\$25,478,570	\$0	\$480,000	\$51,656,545	\$77,615,115

Lockheed Martin Idaho Technologies Co.

Rev 6-96

CONTINGENCY ANALYSIS

 PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
Tractor (Risk Based Estimates)**

 TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-C1**
 PREPARED BY: **S. L. Coward**

 DATE: **27-Jan-1998**
 TIME: **20:42:00**

 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

 REPORT NAME: **Contingency Analysis**

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	9,900,244	10.09	10	40	1.01	4.04	3.532%	10.09%	3,461,268	13,361,512
1.1.2	TITLE III INSPECTION	3,300,081	3.36	10	40	0.34	1.35	1.177%	3.36%	1,153,756	4,453,837
1.2.1	PROJECT MANAGEMENT	11,639,957	11.87	10	40	1.19	4.75	4.153%	11.87%	4,069,497	15,709,454
1.2.2	CONSTRUCTION MANAGEMENT	6,600,163	6.73	10	40	0.67	2.69	2.355%	6.73%	2,307,512	8,907,675
1.3.1	GENERAL CONDITIONS	6,840,414	6.97	10	40	0.70	2.79	2.440%	6.97%	2,391,508	9,231,922
1.3.13	SPECIAL CONSTRUCTION	59,161,216	60.31	10	40	6.03	24.12	21.107%	60.31%	20,683,616	79,844,832
1.5.2	PROCUREMENT FEES	660,016	0.67	10	40	0.07	0.27	0.235%	0.67%	230,751	890,767
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	1	1
SUBTOTAL		98,102,091	100.00					35.000%			
CALCULATED CONTINGENCY		34,335,732									
RESULTANT TEC		132,437,823									
ROUNDED TEC		132,400,000									
PROJECT CONTINGENCY		34,297,909						34.96%			
MANAGEMENT RESERVE		6,666,165									
CONTINGENCY		27,631,744									
TOTAL ESTIMATED COST		132,400,000								34,297,909	132,400,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE
 Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLEAN FILL; UNESCALATED

CLEAN BINS W/ ROBOTS - FLOOR

PROCUREMENT FEE:

CONSTRUCTION =	\$66,001,630	
GFE =		
Subtotal	\$66,001,630	
FEE @ 1% =	\$66,001,630 * 0.01 =	\$660,016

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 10 yrs)

CONSTRUCTION OR		
CEILING * 10 YEARS =	\$5,000,000	
GFE =	\$0	
PROCUREMENT FEE =	\$660,016	
Subtotal	\$5,660,016	
FEE @ 23% =	\$5,660,016 * 0.23 =	\$1,301,804

PIF @ 5.5%

CONSTRUCTION =	\$66,001,630	
GFE =	\$0	
PROCUREMENT FEE =	\$660,016	
G&A =	\$1,301,804	
Subtotal	\$67,963,450	
FEE @ 5.5% =	\$67,963,450 * 0.055 =	\$3,737,990

TOTAL PROCUREMENT FEE:	\$660,016
TOTAL G&A FEE:	\$1,301,804
TOTAL PIF:	\$3,737,990

Lockheed Martin Idaho Technologies Co.

Rev. 6-96

PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
LDUA (Risk Based Estimates)**
 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

COST ESTIMATE SUMMARY

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-D**
 PREPARED BY: **S. L. Coward**
 REPORT NAME: **Cost Estimate Summary**

DATE: **27-Jan-1998**
 TIME: **20:47:33**
 CHECKED BY: _____
 APPRD BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
<u>1.1</u>	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> <u>\$2,778,017</u>
1.1.1	DESIGN ENGINEERING TITLE I & II	2,083,513	0	2,083,513
1.1.2	TITLE III INSPECTION	694,504	0	694,504
<u>1.2</u>	<u>MANAGEMENT COSTS</u>			>> <u>\$5,871,039</u>
1.2.1	PROJECT MANAGEMENT	3,407,558	0	3,407,558
1.2.2	CONSTRUCTION MANAGEMENT	2,463,481	0	2,463,481
<u>1.3</u>	<u>CONSTRUCTION</u>			>> <u>\$13,890,099</u>
1.3.1	GENERAL CONDITIONS	1,831,085	0	1,831,085
1.3.13	SPECIAL CONSTRUCTION	12,059,014	0	12,059,014
1.5.2	PROCUREMENT FEES	138,901	0	>> <u>\$138,901</u>
	SUBTOTAL INCLUDING ESCALATION	22,678,056	0	>> \$22,678,056
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$1,402,900
	CONTINGENCY			>> \$6,519,044
	TOTAL ESTIMATED COST			>> \$30,600,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 20.00%

CONTINGENCY= 34.93%

PAGE # 1

REPORT NAME: Detail Cost Estimate Sheet

REQUESTOR: **Bryan Spaulding**

1.1.1	DESIGN ENGINEERING TITLE I & II ENGINEERING AND DESIGN											
MEMO:	Title I & II Engineering & Design @ 10% of Construction	1	LS		LIMITCO	0.000					1,389,009	1,389,009
	Conceptual Engineering & Design @ 5% of Construction	1	LS		LIMITCO	0.000					694,504	694,504
	DESIGN ENGINEERING TITLE I & II S/T						0				\$2,083,513	\$2,083,513
1.1.2	TITLE III INSPECTION INSPECTION - TITLE III	1	LS		LIMITCO	0.000					694,504	694,504
MEMO:	Title III @ 5% of Construction											
	TITLE III INSPECTION S/T						0				\$694,504	\$694,504
1.2.1	PROJECT MANAGEMENT PROJECT MANAGEMENT	1	LOT		LIMITCO	0.000					1,389,009	1,389,009
MEMO:	PM @ 10% of Construction											
	G&A	1	LS		LIMITCO	0.000					1,181,947	1,181,947
	PIF	1	LS		LIMITCO	0.000					836,602	836,602
	PROJECT MANAGEMENT S/T						0				\$3,407,558	\$3,407,558

[illegible]

Lockheed Martin Idaho Technologies Co.
Rev 6-96
PROJECT NAME: ICPP Bin Set Closure (EIS Study)
LDUA (Risk Based Estimates)
LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning
PROJECT NO.: 2423-D
PREPARED BY: S. L. Coward

PAGE # 3
DATE 27-Jan-1998
TIME: 20:47:35
REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.13	SPECIAL CONSTRUCTION Design of Modifications for add'l Units	6	EA		GEM	0.000					450,000	450,000
	INSTALLATION OF CLEANING UNIT:											
	Install Robotic Units	50	EACH		SKWK GEM	200.000	10,000	331,100				331,100
	Install and Shield Unit Hose/Tubes (Mods, Electr., etc.) - Allowance	50	EA	6,000.00	SKWK GEM	200.000	10,000	331,100		250,000		581,100
	Systems Integration	1	LS		GEM	0.000					100,000	100,000
	Shielding and Retrieval Area	7	EA		GEM	0.000					350,000	350,000
	CAP 18" DIA. HOLES - ASSUME Holes were capped in Floor Estimate	50	EA		SKWK GEM	40.000	2,000	66,220				66,220
	CAP 6" DIAMETER HOLES - Assume Holes were capped in Floor Estimate	50	EA		SKWK GEM	24.000	1,200	39,732				39,732
	OPERATION OF CALCINE RETRIEVAL	19	FTE		SKWK GEM	828.000	15,732	520,887				520,887
	SPECIAL CONSTRUCTION S/T						38,932	\$1,289,039		\$250,000	\$8,450,000	\$9,989,039
	PROJECT SUBTOTAL						71,462	\$2,780,112	\$0	\$250,000	\$17,099,056	\$20,129,168

PROJECT NAME: ICPP Bin Set Closure (EIS Stud
LDUA (Risk Based Estimates)

TYPE OF ESTIMATE: Planning
PROJECT NO: 2423-D
PREPARED BY: S. L. Coward

DATE: 27-Jan-1998
TIME: 20:47:30

LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	2,083,513	9.19	10	40	0.92	3.67	3.216%	9.19%	727,817	2,811,330
1.1.2	TITLE III INSPECTION	694,504	3.06	10	40	0.31	1.22	1.072%	3.06%	242,606	937,110
1.2.1	PROJECT MANAGEMENT	3,407,558	15.03	10	40	1.50	6.01	5.259%	15.03%	1,190,335	4,597,893
1.2.2	CONSTRUCTION MANAGEMENT	2,463,481	10.86	10	40	1.09	4.35	3.802%	10.86%	860,548	3,324,029
1.3.1	GENERAL CONDITIONS	1,831,085	8.07	10	40	0.81	3.23	2.826%	8.07%	639,638	2,470,723
1.3.13	SPECIAL CONSTRUCTION	12,059,014	53.17	10	40	5.32	21.27	18.611%	53.17%	4,212,479	16,271,493
1.5.2	PROCUREMENT FEES	138,901	0.61	10	40	0.06	0.24	0.214%	0.61%	48,521	187,422
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
SUBTOTAL		22,678,056	100.00					35.000%			
CALCULATED CONTINGENCY		7,937,320									
RESULTANT TEC		30,615,376									
ROUNDED TEC		30,600,000									
PROJECT CONTINGENCY		7,921,944						34.93%			
MANAGEMENT RESERVE		1,402,900									
CONTINGENCY		6,519,044									
TOTAL ESTIMATED COST		30,600,000								7,921,944	30,600,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLEAN FILL; UNESCALATED

CLEAN BINS W/ ROBOTS - WALLS

PROCUREMENT FEE:

CONSTRUCTION =	\$13,890,099		
GFE =			
Subtotal	\$13,890,099		
FEE @ 1% =	\$13,890,099	* 0.01 =	\$138,901

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 10 yrs)

CONSTRUCTION OR CEILING * 10 YEARS =	\$5,000,000		
GFE =	\$0		
PROCUREMENT FEE =	\$138,901		
Subtotal	\$5,138,901		
FEE @ 23% =	\$5,138,901	* 0.23 =	\$1,181,947

PIF @ 5.5%

CONSTRUCTION =	\$13,890,099		
GFE =	\$0		
PROCUREMENT FEE =	\$138,901		
G&A =	\$1,181,947		
Subtotal	\$15,210,947		
FEE @ 5.5% =	\$15,210,947	* 0.055 =	\$836,602

TOTAL PROCUREMENT FEE:	\$138,901
TOTAL G&A FEE:	\$1,181,947
TOTAL PIF:	\$836,602

COST ESTIMATE SUMMARY

PROJECT NAME: ICPP Bin Set Closure (EIS Stud
Pipe Crawler (Risk Based Estim
LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
PROJECT NO: 2423-E
PREPARED BY: S. L. Coward
REPORT NAME: Cost Estimate Summary

DATE: 27-Jan-1998
TIME: 20:52:33
CHECKED BY:
APPR'D BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$1,185,557
1.1.1	DESIGN ENGINEERING	889,168	0	889,168
1.1.2	TITLE III INSPECTION	296,389	0	296,389
1.2	<u>MANAGEMENT COSTS</u>			>> \$2,742,481
1.2.1	PROJECT MANAGEMENT	2,149,702	0	2,149,702
1.2.2	CONSTRUCTION MANAGEMENT	592,779	0	592,779
1.3	<u>CONSTRUCTION</u>			>> \$5,927,794
1.3.1	GENERAL CONDITIONS	1,831,085	0	1,831,085
1.3.13	SPECIAL CONSTRUCTION	4,096,709	0	4,096,709
1.5.2	PROCUREMENT FEES	59,278	0	>> \$59,278
	SUBTOTAL INCLUDING ESCALATION	9,915,110	0	>> \$9,915,110
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$598,707
	CONTINGENCY			>> \$2,886,183
	TOTAL ESTIMATED COST			>> \$13,400,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 20.00%

CONTINGENCY= 35.15%

LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
PROJECT NO.: 2423-E
PREPARED BY: S. L. Coward

PAGE # 1

DATE 27-Jan-1998

TIME: 20:52:35

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

TYPE OF ESTIMATE: **Planning**
PROJECT NO.: **2423-E**
PREPARED BY: **S. L. Coward**

[illegible]

PROJECT NAME: ICPP Bin Set Closure (EIS Study)
Pipe Crawler (Risk Based Estimates)

TYPE OF ESTIMATE: Planning
PROJECT NO.: 2423-E
PREPARED BY: S. L. Coward

DATE: 27-Jan-1998
TIME: 20:52:35
REPORT NAME: Detail Cost Estimate Sheet

LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.13	SPECIAL CONSTRUCTION											
	Design of Modifications for add'l units	6	EA		GEN	0.000					90,000	90,000
	INSTALLATION OF PIPE CRAWLER											
	Install Robotic Units	50	EACH		SKWK GEN	180.000	9,000	297,990				297,990
	Install and Shield Unit Hose/Tubes (Mods, Electr., etc.) - Allowance	50	EA	6,000.00	SKWK GEN	180.000	9,000	297,990		250,000		547,990
	Systems Integration	1	LS		GEN	0.000					100,000	100,000
	Shielding and Retrieval Area	7			GEN	0.000					360,000	360,000
	CAP 18" DIAMETER HOLES - ASSUME Holes Capped In Floor Estimate	50	EA		SKWK GEN	40.000	2,000	66,220				66,220
	CAP 6" DIAMETER HOLES - ASSUME Holes Capped In Floor Estimate	50	EA		SKWK GEN	24.000	1,200	39,732				39,732
	OPERATION OF CALCINE RETRIEVAL	19	FTE		SKWK GEN	515.000	9,785	323,981				323,981
	SPECIAL CONSTRUCTION S/T						30,985	\$1,025,913		\$250,000	\$1,760,000	\$3,035,913
	PROJECT SUBTOTAL						63,605	\$2,516,987	\$0	\$250,000	\$5,688,038	\$8,455,025

Lockheed Martin Idaho Technologies Co.

Rev 6-96

CONTINGENCY ANALYSIS

PROJECT NAME: ICPP Bin Set Closure (EIS Stud
 Pipe Crawler (Risk Based Estim
 LOCATION 1: ICPP
 REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
 PROJECT NO: 2423-E
 PREPARED BY: S. L. Coward

DATE: 27-Jan-1998
 TIME: 20:52:30

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING	889,168	8.97	10	40	0.90	3.59	3.139%	8.97%	312,518	1,201,686
1.1.2	TITLE III INSPECTION	296,389	2.99	10	40	0.30	1.20	1.046%	2.99%	104,173	400,562
1.2.1	PROJECT MANAGEMENT	2,149,702	21.68	10	40	2.17	8.67	7.588%	21.68%	755,561	2,905,263
1.2.2	CONSTRUCTION MANAGEMENT	592,779	5.98	10	40	0.60	2.39	2.092%	5.98%	208,346	801,125
1.3.1	GENERAL CONDITIONS	1,831,085	18.47	10	40	1.85	7.39	6.464%	18.47%	643,576	2,474,661
1.3.13	SPECIAL CONSTRUCTION	4,096,709	41.32	10	40	4.13	16.53	14.461%	41.32%	1,439,881	5,536,590
1.5.2	PROCUREMENT FEES	59,278	0.60	10	40	0.06	0.24	0.209%	0.60%	20,835	80,113
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
SUBTOTAL		9,915,110	100.00					35.000%			
CALCULATED CONTINGENCY		3,470,289									
RESULTANT TEC		13,385,399									
ROUNDED TEC		13,400,000									
PROJECT CONTINGENCY		3,484,890						35.15%			
MANAGEMENT RESERVE		598,707									
CONTINGENCY		2,886,183									
TOTAL ESTIMATED COST		13,400,000								3,484,890	13,400,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE
 Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
 Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
 TITLE I 10% - 20%
 TITLE II 5% - 15%
 TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLEAN FILL; UNESCALATED

CLEAN BINS W/ ROBOTS - PIPING

PROCUREMENT FEE:

CONSTRUCTION =	\$5,927,794		
GFE =			
Subtotal	\$5,927,794		
FEE @ 1% =	\$5,927,794	* 0.01 =	\$59,278

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 10 yrs)

CONSTRUCTION OR			
CEILING * 10 YEARS =	\$5,000,000		
GFE =	\$0		
PROCUREMENT FEE =	\$59,278		
Subtotal	\$5,059,278		
FEE @ 23% =	\$5,059,278	* 0.23 =	\$1,163,634

PIF @ 5.5%

CONSTRUCTION =	\$5,927,794		
GFE =	\$0		
PROCUREMENT FEE =	\$59,278		
G&A =	\$1,163,634		
Subtotal	\$7,150,706		
FEE @ 5.5% =	\$7,150,706	* 0.055 =	\$393,289

TOTAL PROCUREMENT FEE:	\$59,278
TOTAL G&A FEE:	\$1,163,634
TOTAL PIF:	\$393,289

Lockheed Martin Idaho Technologies Co.
COST ESTIMATE SUMMARY

Rev. 6-96
 PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
 Place Clean Grout in Bins**
 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-A1**
 PREPARED BY: **S. L. Coward**
 REPORT NAME: **Cost Estimate Summary**

DATE: **28-Jan-1998**
 TIME: **09:18:14**
 CHECKED BY:
 APPR'D BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$1,976,378
1.1.1	DESIGN ENGINEERING	1,646,982	0	1,646,982
1.1.2	TITLE III INSPECTION	329,396	0	329,396
1.2	<u>MANAGEMENT COSTS</u>			>> \$2,184,831
1.2.1	PROJECT MANAGEMENT	1,526,038	0	1,526,038
1.2.2	CONSTRUCTION MANAGEMENT	658,793	0	658,793
1.3	<u>CONSTRUCTION</u>			>> \$6,587,931
1.3.1	GENERAL CONDITIONS	1,067,791	0	1,067,791
1.3.2	SITWORK	229,119	0	229,119
1.3.3	CONCRETE	5,291,021	0	5,291,021
1.5.2	PROCUREMENT FEES	65,879	0	>> \$65,879
	SUBTOTAL INCLUDING ESCALATION	10,815,019	0	>> \$10,815,019
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$665,381
	CONTINGENCY			>> \$3,119,600
	TOTAL ESTIMATED COST			>> \$14,600,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 30.00%

CONTINGENCY= 35.00%

Rev 6-96

PROJECT NAME: ICPP Bin Set Closure (EIS Study)

Place Clean Grout in Bins

LOCATION 1: ICPP

REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-A1

PREPARED BY: **S. L. Coward**

DATE 28-Jan-1998

TIME: 09:18:23

REPORT NAME: Detail Cost Estimate Sheet

[illegible]

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-A1

PREPARED BY: S. L. Coward

DATE **28-Jan-1998**

TIME: 09:18:23

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

DATE 28-Jan-1998

TIME: 09:18:23

REPORT NAME: Detail Cost Estimate Sheet

REQUESTOR: Bryan Spaulding

[illegible]

Rev 6-96
PROJECT NAME: ICPP Bin Set Closure (EIS Study)
Place Clean Grout in Bins
LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
PROJECT NO.: 2423-A1
PREPARED BY: S. L. Coward

DATE 28-Jan-1998
TIME: 09:18:23
REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
<u>1.3.3.1</u> MEMO:	<u>TANK GROUTING</u> Assume maximum quantity for 1 bin (Bin #6 or 7) and reuse											
	INSTALL AND REMOVE DROP TUBES (50 Bins) (Incl. 10% Waste)	3,650	LF		CONC GEN	0.500	1,825	58,455				58,455
	GROUT PLACEMENT & CLEANUP (Includes 10% Waste)	10,406	CY	80.00	CONC GEN	0.350	3,642	116,656		832,480		949,136
	GROUT OVER TANK MONITOR FEET	168	EA	80.00	CONC GEN	24.000	4,032	129,145		13,440		142,585
	TANK GROUTING S/T						9,499	\$304,266		\$859,560		\$1,163,816
<u>1.3.3.2</u>	<u>TANK LEAK MONITORS AND VENTILATION</u> TANK LEAK MONITORS	168	EA	10,000.00	CONC GEN	32.000	5,376	172,193		1,680,000		1,852,193
	TANK LEAK MONITORS AND VENTILATION S/T						5,376	\$172,193		\$1,680,000		\$1,852,193
	PROJECT SUBTOTAL						<u>44,071</u>	<u>\$1,635,971</u>	<u>\$80,000</u>	<u>\$2,636,620</u>	<u>\$4,161,209</u>	<u>\$8,513,800</u>

Lockheed Martin Idaho Technologies Co.
CONTINGENCY ANALYSIS

Rev 6-96

 PROJECT NAME: **ICPP Bin Set Closure (EIS Stud**
Place Clean Grout in Bins

 LOCATION 1: **ICPP**

 REQUESTOR: **Bryan Spaulding**

 TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-A1**
 PREPARED BY: **S. L. Coward**

 DATE: **28-Jan-1998**
 TIME: **09:18:11**

 REPORT NAME: **Contingency Analysis**

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING	1,646,982	15.23	10	40	1.52	6.09	5.330%	15.23%	576,402	2,223,384
1.1.2	TITLE III INSPECTION	329,396	3.05	10	40	0.30	1.22	1.066%	3.05%	115,280	444,676
1.2.1	PROJECT MANAGEMENT	1,526,038	14.11	10	40	1.41	5.64	4.939%	14.11%	534,074	2,060,112
1.2.2	CONSTRUCTION MANAGEMENT	658,793	6.09	10	40	0.61	2.44	2.132%	6.09%	230,561	889,354
1.3.1	GENERAL CONDITIONS	1,067,791	9.87	10	40	0.99	3.95	3.456%	9.87%	373,700	1,441,491
1.3.2	SITWORK	229,119	2.12	10	40	0.21	0.85	0.741%	2.12%	80,186	309,305
1.3.3	CONCRETE	5,291,021	48.92	10	40	4.89	19.57	17.123%	48.92%	1,851,722	7,142,743
1.5.2	PROCUREMENT FEES	65,879	0.61	10	40	0.06	0.24	0.213%	0.61%	23,056	88,935
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
SUBTOTAL		10,815,019	100.00					35.000%			
CALCULATED CONTINGENCY		3,785,257									
RESULTANT TEC		14,600,276									
ROUNDED TEC		14,600,000									
PROJECT CONTINGENCY		3,784,981						35.00%			
MANAGEMENT RESERVE		665,381									
CONTINGENCY		3,119,600									
TOTAL ESTIMATED COST		14,600,000								3,784,981	14,600,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
 Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLEAN FILL; UNESCALATED

FILL BINS W/ NRC CLEAN GROUT

PROCUREMENT FEE:

CONSTRUCTION =	\$6,587,931		
GFE =			
Subtotal	\$6,587,931		
FEE @ 1% =	\$6,587,931	* 0.01 =	\$65,879

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 4 yrs)

CONSTRUCTION OR			
CEILING * 4 YEARS =	\$2,000,000		
GFE =	\$0		
PROCUREMENT FEE =	\$65,879		
Subtotal	\$2,065,879		
FEE @ 23% =	\$2,065,879	* 0.23 =	\$475,152

PIF @ 5.5%

CONSTRUCTION =	\$6,587,931		
GFE =	\$0		
PROCUREMENT FEE =	\$65,879		
G&A =	\$475,152		
Subtotal	\$7,128,963		
FEE @ 5.5% =	\$7,128,963	* 0.055 =	\$392,093

TOTAL PROCUREMENT FEE:	\$65,879
TOTAL G&A FEE:	\$475,152
TOTAL PIF:	\$392,093

COST ESTIMATE SUMMARY

PROJECT NAME: ICPP Bin Set Closure
D&D of Equipment
LOCATION 1: INEEL / ICPP
REQUESTOR: B. C. Spaulding

TYPE OF ESTIMATE: Planning
PROJECT NO: 2423D&D
PREPARED BY: S.L.Coward/smb
REPORT NAME: Cost Estimate Summary

DATE: 27-Jan-1998
TIME: 19:33:11
CHECKED BY:
APPRD BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> <u>\$0</u>
1.1.1	DESIGN ENGINEERING TITLE I & II	0	0	0
1.1.2	TITLE III INSPECTION	0	0	0
1.2	<u>MANAGEMENT COSTS</u>			>> <u>\$800,213</u>
1.2.1	PROJECT MANAGEMENT	800,213	0	800,213
1.2.2	CONSTRUCTION MANAGEMENT	0	0	0
1.3	<u>CONSTRUCTION</u>			>> <u>\$11,709,711</u>
1.3.13	SPECIAL CONSTRUCTION	11,709,711	0	11,709,711
1.5.2	PROCUREMENT FEES	117,097	0	>> <u>\$117,097</u>
	SUBTOTAL INCLUDING ESCALATION	12,627,021	0	>> \$12,627,021
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$0
	CONTINGENCY			>> \$4,372,979
	TOTAL ESTIMATED COST			>> \$17,000,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 0.00%

CONTINGENCY= 34.63%

Rev 6-96

PAGE # 1

DATE: 27-Jan-1998
TIME: 19:30:57
REPORT NAME: Detail Cost Estimate Sheet

[illegible]

[illegible]

Rev 6-98

PROJECT NAME: ICPP Bin Set Closure

D&D of Equipment

LOCATION 1: INEEL / ICPP

REQUESTOR: **B. C. Spaulding**

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423D&D

PREPARED BY: S.L.Coward/smb

DATE 27-Jan-1998

TIME: 19:30:57

REPORT NAME: Detail Cost Estimate Sheet

[illegible]

PROJECT NAME: ICPP Bln Set Closure
D&D of Equipment
LOCATION 1: INEEL / ICPP
REQUESTOR: B. C. Spaulding

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning
PROJECT NO.: 2423D&D
PREPARED BY: S.L.Coward/smb

DATE 27-Jan-1998
TIME: 19:30:57
REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.13	SPECIAL CONSTRUCTION											
	Grouting Manifolds - Class C - Allowance - 8 ea @ 300 sf	1	lot			0.000					537,274	537,274
	LDUA's - Allowance - 7 ea @ 150 sf	1	lot			0.000					209,873	209,873
	Pipe Crawler Robots - Allowance - 7 ea @ 150 sf	1	lot			0.000					209,873	209,873
	Tractor Robots - Allowance - 53 ea @ 250 sf	1	lot			0.000					2,648,393	2,648,393
	Misc Robot Wire and Hose Lines - Allowance - 1 ea @ 1000 sf	1	lot			0.000					199,879	199,879
	Waste Disposal - quantities as stated in EDF											
	- Solid Waste	500	cf			0.000					540	540
	- Radioactive Waste	10,000	cf			0.000					3,000,000	3,000,000
	- Mixed Waste	2,200	cf			0.000					275,000	275,000
	SPECIAL CONSTRUCTION S/T						0				\$*,***,***	\$11,709,711
	PROJECT SUBTOTAL						0	\$0	\$0	\$0	\$12,509,924	\$12,509,924

CONTINGENCY ANALYSIS

PROJECT NAME: ICPP Bin Set Closure
D&D of Equipment
LOCATION 1: INEEL / ICPP
REQUESTOR: B. C. Spaulding

TYPE OF ESTIMATE: Planning
PROJECT NO: 2423D&D
PREPARED BY: S.L.Coward/smb

DATE: 27-Jan-1998
TIME: 19:33:04

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION								PROJECT CONTINGENCY		SUMMARY	
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.1.2	TITLE III INSPECTION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.2.1	PROJECT MANAGEMENT	800,213	6.34	10	40	0.63	2.53	2.218%	6.34%	277,129	1,077,342
1.2.2	CONSTRUCTION MANAGEMENT	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.3.13	SPECIAL CONSTRUCTION	11,709,711	92.74	10	40	9.27	37.09	32.457%	92.74%	4,055,297	15,765,008
1.5.2	PROCUREMENT FEES	117,097	0.93	10	40	0.09	0.37	0.325%	0.93%	40,553	157,650
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
SUBTOTAL		12,627,021	100.00					35.000%			
CALCULATED CONTINGENCY		4,419,457									
RESULTANT TEC		17,046,478									
ROUNDED TEC		17,000,000									
PROJECT CONTINGENCY		4,372,979						34.63%			
MANAGEMENT RESERVE		0									
CONTINGENCY		4,372,979									
TOTAL ESTIMATED COST		17,000,000								4,372,979	17,000,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLEAN FILL; UNESCALATED

D&D OF EQUIPMENT

PROCUREMENT FEE:

CONSTRUCTION =	\$11,709,711	
GFE =		
Subtotal	\$11,709,711	
FEE @ 1% =	\$11,709,711 * 0.01 =	\$117,097

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 1 yr)

CONSTRUCTION OR		
CEILING * 1 YEARS =	\$500,000	
GFE =	\$0	
PROCUREMENT FEE =	\$117,097	
Subtotal	\$617,097	
FEE @ 23% =	\$617,097 * 0.23 =	\$141,932

PIF @ 5.5%

CONSTRUCTION =	\$11,709,711	
GFE =	\$0	
PROCUREMENT FEE =	\$117,097	
G&A =	\$141,932	
Subtotal	\$11,968,740	
FEE @ 5.5% =	\$11,968,740 * 0.055 =	\$658,281

TOTAL PROCUREMENT FEE:	\$117,097
TOTAL G&A FEE:	\$141,932
TOTAL PIF:	\$658,281

COST ESTIMATE SUMMARY
ESCALATED

ICPP BIN SET CLOSURE RISK BASED CLEAN CLOSURE CLEAN FILL Requestor: B. C. Spaulding	Planning Estimate Estimate #2423 Prepared by: S. L. Coward	<div>1/28/98</div> <div>Checked by: </div> <div>Approved by: </div>
Regulatory Compliance	10,300,000	
Fill Vaults with Clean Grout	24,000,000	
Clean Bins with Robots		
Floor	258,700,000	
Walls	59,800,000	
Piping	27,900,000	
Fill Bins with Clean Grout	29,000,000	
D&D of Equipment	50,600,000	
TOTAL	\$460,300,000	
	USE	\$460,000,000

Lockheed Martin Idaho Technologies Co.
COST ESTIMATE SUMMARY

Rev. 6-96

PROJECT NAME: **Permitting/Documentation**
Risk Based - Clean
 LOCATION 1: **INEEL/CPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **PLANNING**
 PROJECT NO: **2423-A1 D**
 PREPARED BY: **S. L. Coward**
 REPORT NAME: **Cost Estimate Summary**

DATE: **28-Jan-1998**
 TIME: **09:48:36**
 CHECKED BY: **SNB**
 APPRD BY:

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>CONCEPTUAL</u>			>> \$0
1.1.1	CONCEPTUAL DESIGN	0	0	0
1.2	<u>MANAGEMENT</u>			>> \$1,498,012
1.2.1	PM FOR PROJECT DEVELOPMENT	774,995	480,497	1,255,492
1.2.2	PROJECT EXECUTION	149,704	92,816	242,520
1.3	<u>PERMITTING</u>			>> \$6,063,013
1.3.1	PERMITTING	3,742,601	2,320,412	6,063,013
1.5.2	PROCUREMENT FEES	37,426	23,204	>> \$60,630
	SUBTOTAL INCLUDING ESCALATION	4,704,726	2,916,929	>> \$7,621,655
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$612,364
	CONTINGENCY			>> \$2,065,981
	TOTAL ESTIMATED COST			>> \$10,300,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 0.00%

CONTINGENCY= 35.14%

DATE 28-Jan-1998

TIME: 10:07:13

TIME: 10:07:13

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

DETAILED COST ESTIMATE SHEET

PAGE # 2

Rev 6-96

PROJECT NAME: Permitting/Documentation

TYPE OF ESTIMATE: PLANNING

DATE 28-Jan-1998

OBJECT NAME: Risk Based - Clean

PROJECT NO.: 2423-A1 D

TIME: 10:07:13

LOCATION 1: INEEL/ICPP

PREPARED BY: S. L. Coward

REPORT NAME: Detail Cost Estimate Sheet

REQUESTOR: Bryan Spaulding

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
2.1.2	PROJECT SUPPORT											
	PROJECT SUPPORT S/T						0				\$149,704	\$149,704
3.1	PERMITTING											
	Air Monitoring Activities, Fees, etc.	1	LS		LIMITCO	0.000					770,000	770,000
	RCRC Closure (Incl. Writing, Reviews, Public Comments & Issuance of Permits)	2	FTE		Z-1700 LIMITCO	1440.00	2,880	186,221				186,221
	P.E. Activities	1	LS		LIMITCO	0.000					60,000	60,000
	CAA Permit to Construct (Incl. Preparing, Reviews, Public comments & Issuance)	1	LS		Z-1700 LIMITCO	1800.00	1,800	116,388				116,388
	CERCLA Coordinator	2	FTE		Z-1700 LIMITCO	1500.00	3,000	193,980				193,980
	Regulatory Affairs Oversight	3	YR		Z-1700 LIMITCO	150.000	450	29,097				29,097
	Other Regulatory Compliance (CWA, Storm Water, Historical, etc.)	1	LS		Z-1700 LIMITCO	1000.00	1,000	64,660				64,660
	Survey Plat	1	LS		LIMITCO	0.000					10,000	10,000
	SARR	1	LS		Z-3170 LIMITCO	4500.00	4,500	312,255				312,255
	Operational Readiness Review	1	LS		LIMITCO	0.000					2,000,000	2,000,000
	PERMITTING S/T						13,630	\$902,601			\$2,840,000	\$3,742,601
	PROJECT SUBTOTAL						13,630	\$902,601	\$0	\$0	\$3,764,699	\$4,667,300

Lockheed Martin Idaho Technologies Co.
CONTINGENCY ANALYSIS

Rev 6-96

 PROJECT NAME: **Permitting/Documentation**

 TYPE OF ESTIMATE: **PLANNING**

 DATE: **28-Jan-1998**

Risk Based - Clean

 PROJECT NO: **2423-A1 D**

 TIME: **09:48:12**

 LOCATION 1: **INEEL/ICPP**

 PREPARED BY: **S. L. Coward**

 REQUESTOR: **Bryan Spaulding**

 REPORT NAME: **Contingency Analysis**

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	CONCEPTUAL DESIGN	0	0.00	10	40	0.00	0.00	0.000%	0.00%	0	0
1.2.1	PM FOR PROJECT DEVELOPMENT	774,995	10.17	10	40	1.02	4.07	3.559%	10.17%	272,343	1,047,338
1.2.2	PROJECT EXECUTION	149,704	1.96	10	40	0.20	0.79	0.687%	1.96%	52,608	202,312
1.3.1	PERMITTING	3,742,601	49.10	10	40	4.91	19.64	17.187%	49.10%	1,315,197	5,057,798
1.5.2	PROCUREMENT FEES	37,426	0.49	10	40	0.05	0.20	0.172%	0.49%	13,152	50,578
	ESCALATION	2,916,929	38.27	10	40	3.83	15.31	13.395%	38.27%	1,025,045	3,941,974
SUBTOTAL		7,621,655	100.00					35.000%			
CALCULATED CONTINGENCY		2,667,579									
RESULTANT TEC		10,289,234									
ROUNDED TEC		10,300,000									
PROJECT CONTINGENCY		2,678,345						35.14%			
MANAGEMENT RESERVE		612,364									
CONTINGENCY		2,065,981									
TOTAL ESTIMATED COST		10,300,000								2,678,345	10,300,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLEAN FILL; ESCALATED

REGULATORY COMPLIANCE

PROCUREMENT FEE:

CONSTRUCTION =	\$6,063,013		
GFE =			
Subtotal	\$6,063,013		
FEE @ 1% =	\$6,063,013	* 0.01 =	\$60,630

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 3 yrs)

CONSTRUCTION OR CEILING * 3 YEARS =	\$1,500,000		
GFE =	\$0		
PROCUREMENT FEE =	\$60,630		
Subtotal	\$1,560,630		
FEE @ 23% =	\$1,560,630	* 0.23 =	\$358,945

PIF @ 5.5%

CONSTRUCTION =	\$3,742,601		
GFE =	\$0		
PROCUREMENT FEE =	\$60,630		
G&A =	\$358,945		
Subtotal	\$4,162,176		
FEE @ 5.5% =	\$4,162,176	* 0.055 =	\$228,920

TOTAL PROCUREMENT FEE:	\$60,630
TOTAL G&A FEE:	\$358,945
TOTAL PIF:	\$228,920

Lockheed Martin Idaho Technologies Co.
COST ESTIMATE SUMMARY

Rev. 6-86
 PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
 Place Clean Grout in Vault**
 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-A2-E2**
 PREPARED BY: **S. L. Coward**
 REPORT NAME: **Cost Estimate Summary**

DATE: **28-Jan-1998**
 TIME: **09:51:45**
 CHECKED BY: **JMB**
 APPR'D BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$2,562,185
1.1.1	DESIGN ENGINEERING	1,324,812	702,150	2,026,962
1.1.2	TITLE III INSPECTION	264,962	270,261	535,223
1.2	<u>MANAGEMENT COSTS</u>			>> \$4,407,388
1.2.1	PROJECT MANAGEMENT	1,702,520	1,634,419	3,336,939
1.2.2	CONSTRUCTION MANAGEMENT	529,925	540,524	1,070,449
1.3	<u>CONSTRUCTION</u>			>> \$10,704,484
1.3.1	GENERAL CONDITIONS	1,067,791	1,089,146	2,156,937
1.3.2	SITWORK	0	0	0
1.3.3	CONCRETE	4,231,459	4,316,088	8,547,547
1.5.2	PROCUREMENT FEES	52,992	54,052	>> \$107,044
	SUBTOTAL INCLUDING ESCALATION	9,174,461	8,606,640	>> \$17,781,101
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$1,081,153
	CONTINGENCY			>> \$5,137,746
	TOTAL ESTIMATED COST			>> \$24,000,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= **24.00%**

CONTINGENCY= **34.97%**

DATE 28-Jan-1998

REPORT NAME: **Detail Cost Estimate Sheet**

REQUESTOR: **Bryan Spaulding**

PREPARED BY: **S. L. Coward**

[illegible]

DATE: 28-Jan-1998
TIME: 10:10:46
REPORT NAME: Detail Cost Estimate Sheet

[illegible]

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-A2-E2

PREPARED BY: S. L. Coward

PAGE # 4

DATE 28-Jan-1998

TIME: 10:10:46

REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.3.1 MEMO:	VAULT GROUTING Assume 4 tubes x 7 vaults plus 10% waste											
	GROUT PLACEMENT & CLEANUP (Includes 10% Waste)	22,946	CY	80.00	CONC GEN	0.350	8,031	257,236		1,835,680		2,092,916
	VAULT GROUTING S/T						9,093	\$291,236		\$1,843,480		\$2,134,716
1.3.3.2	BIN SET VAULT ACCESS HOLES CORE DRILL 18" HOLE THROUGH VAULT ROOF (4 PLACES/VAULT)	28	EA	1,000.00	CONC GEN	100.000	2,800	89,684		28,000		117,684
	SHIELDING AROUND VAULT HOLES	28	EA	5,000.00	CONC GEN	24.000	672	21,524		140,000		161,524
	CAP 18" DIAMETER HOLES	28	EA	1,800.00	CONC GEN	40.000	1,120	35,874		50,400		86,274
	BIN SET VAULT ACCESS HOLES S/T						4,592	\$147,082		\$218,400		\$365,482
	PROJECT SUBTOTAL						<u>36,012</u>	<u>\$1,377,853</u>	<u>\$80,000</u>	<u>\$2,097,960</u>	<u>\$3,822,219</u>	<u>\$7,378,032</u>

Lockheed Martin Idaho Technologies Co.

Rev 6-96

CONTINGENCY ANALYSIS

PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
Place Clean Grout in Vault**
 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-A2-E2**
 PREPARED BY: **S. L. Coward**

DATE: **28-Jan-1998**
 TIME: **09:51:35**

REPORT NAME: **Contingency Analysis**

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING	1,324,812	7.45	10	40	0.75	2.98	2.608%	7.45%	463,350	1,788,162
1.1.2	TITLE III INSPECTION	264,962	1.49	10	40	0.15	0.60	0.522%	1.49%	92,670	357,632
1.2.1	PROJECT MANAGEMENT	1,702,520	9.57	10	40	0.96	3.83	3.351%	9.57%	595,452	2,297,972
1.2.2	CONSTRUCTION MANAGEMENT	529,925	2.98	10	40	0.30	1.19	1.043%	2.98%	185,340	715,265
1.3.1	GENERAL CONDITIONS	1,067,791	6.01	10	40	0.60	2.40	2.102%	6.01%	373,457	1,441,248
1.3.2	SITWORK	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.3.3	CONCRETE	4,231,459	23.80	10	40	2.38	9.52	8.329%	23.80%	1,479,943	5,711,402
1.5.2	PROCUREMENT FEES	52,992	0.30	10	40	0.03	0.12	0.104%	0.30%	18,534	71,526
	ESCALATION	8,606,640	48.40	10	40	4.84	19.36	16.941%	48.40%	3,010,153	11,616,793
SUBTOTAL		17,781,101	100.00					35.000%			
CALCULATED CONTINGENCY		6,223,385									
RESULTANT TEC		24,004,486									
ROUNDED TEC		24,000,000									
PROJECT CONTINGENCY		6,218,899						34.97%			
MANAGEMENT RESERVE		1,081,153									
CONTINGENCY		5,137,746									
TOTAL ESTIMATED COST		24,000,000								6,218,899	24,000,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
 Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLEAN FILL; ESCALATED

FILL VAULTS W/ CLEAN GROUT

PROCUREMENT FEE:

CONSTRUCTION =	\$10,704,484	
GFE =		
Subtotal	\$10,704,484	
FEE @ 1% =	\$10,704,484 * 0.01 =	\$107,045

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 7 yrs)

CONSTRUCTION OR CEILING * 7 YEARS =	\$3,500,000	
GFE =	\$0	
PROCUREMENT FEE =	\$107,045	
Subtotal	\$3,607,045	
FEE @ 23% =	\$3,607,045 * 0.23 =	\$829,620

PIF @ 5.5%

CONSTRUCTION =	\$5,299,250	
GFE =	\$0	
PROCUREMENT FEE =	\$107,045	
G&A =	\$829,620	
Subtotal	\$6,235,915	
FEE @ 5.5% =	\$6,235,915 * 0.055 =	\$342,975

TOTAL PROCUREMENT FEE:	\$107,045
TOTAL G&A FEE:	\$829,620
TOTAL PIF:	\$342,975

Lockheed Martin Idaho Technologies Co.**COST ESTIMATE SUMMARY**

Rev. 6-96

PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
Tractor (Risk Based Estimates)**TYPE OF ESTIMATE: **Planning**
PROJECT NO: **2423-C1-E2**
PREPARED BY: **S. L. Coward**
REPORT NAME: **Cost Estimate Summary**LOCATION 1: **ICPP**
REQUESTOR: **Bryan Spaulding**DATE: **28-Jan-1998**TIME: **12:02:53**CHECKED BY: **SMB**

APPR'D BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$21,021,518
1.1.1	DESIGN ENGINEERING TITLE I & II	9,900,244	4,455,110	14,355,354
1.1.2	TITLE III INSPECTION	3,300,081	3,366,083	6,666,164
1.2	<u>MANAGEMENT COSTS</u>			>> \$35,947,378
1.2.1	PROJECT MANAGEMENT	11,840,340	10,774,709	22,615,049
1.2.2	CONSTRUCTION MANAGEMENT	6,600,163	6,732,166	13,332,329
1.3	<u>CONSTRUCTION</u>			>> \$133,323,293
1.3.1	GENERAL CONDITIONS	6,840,414	6,977,222	13,817,636
1.3.13	SPECIAL CONSTRUCTION	59,161,216	60,344,441	119,505,657
1.5.2	PROCUREMENT FEES	660,016	673,217	>> \$1,333,233
SUBTOTAL INCLUDING ESCALATION		98,302,474	93,322,948	>> \$191,625,422
PROJECT CONTINGENCY				
MANAGEMENT RESERVE				>> \$13,465,653
CONTINGENCY				>> \$53,608,925
TOTAL ESTIMATED COST				>> \$258,700,000

PROJECT COST PARAMETERSEDI AS A % OF CONST. + GFE= **16.00%**CONTINGENCY= **35.00%**

DATE 28-Jan-1998

REPORT NAME: **Detail Cost Estimate Sheet**

PREPARED BY: **S. L. Coward**

PAGE # 2

PROJECT NO.: 2423-C1-E2

PREPARED BY: S. L. Coward

TIME: 12:02:55

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

Rev 6-96
 PROJECT NAME: ICPP Bin Set Closure (EIS Study)
 Tractor (Risk Based Estimates)
 LOCATION 1: ICPP
 REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
 PROJECT NO.: 2423-C1-E2
 PREPARED BY: S. L. Coward

DATE 28-Jan-1998
 TIME: 12:02:55
 REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
<u>1.3.13</u>	SPECIAL CONSTRUCTION Design of Development of Modifications to Add'l Units	52	EA		GEN	0.000					1,300,000	1,300,000
	INSTALLATION OF CLEANING UNIT:											
	Install Robotic Units	50	EACH		SKWK GEN	160.000	8,000	264,880				264,880
	Install and Shield Unit Hose/Tubes (Mods, Electr., etc.) - Allowance	50	EA	5,000.00	SKWK GEN	160.000	8,000	264,880		250,000		514,880
	Systems Integration	1	LS		GEN	0.000					75,000	75,000
	CAP 16" DIAMETER HOLES	100	EA	1,800.00	SKWK GEN	40.000	4,000	132,440		180,000		312,440
	CAP 6" DIAMETER HOLES	100		500.00	SKWK GEN	24.000	2,400	79,464		50,000		129,464
	OPERATION OF CALCINE RETRIEVAL -	19	FTE		SKWK GEN	34590.0	657,210	21,760,223				21,760,223
	SPECIAL CONSTRUCTION S/T						679,610	\$22,501,887		\$480,000	\$*,***,***	\$40,356,887
	PROJECT SUBTOTAL						<u>744,485</u>	<u>\$25,478,570</u>	<u>\$0</u>	<u>\$480,000</u>	<u>\$51,856,928</u>	<u>\$77,815,498</u>

Lockheed Martin Idaho Technologies Co.

Rev 6-96

CONTINGENCY ANALYSIS

 PROJECT NAME: **ICPP Bin Set Closure (EIS Stud**
Tractor (Risk Based Estimates)

 TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-C1-E2**
 PREPARED BY: **S. L. Coward**

 DATE: **28-Jan-1998**

 TIME: **12:02:49**

 LOCATION 1: **ICPP**

 REQUESTOR: **Bryan Spaulding**

 REPORT NAME: **Contingency Analysis**

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	9,900,244	5.17	10	40	0.52	2.07	1.808%	5.17%	3,465,379	13,365,623
1.1.2	TITLE III INSPECTION	3,300,081	1.72	10	40	0.17	0.69	0.603%	1.72%	1,155,126	4,455,207
1.2.1	PROJECT MANAGEMENT	11,840,340	6.18	10	40	0.62	2.47	2.163%	6.18%	4,144,470	15,984,810
1.2.2	CONSTRUCTION MANAGEMENT	6,600,163	3.44	10	40	0.34	1.38	1.206%	3.44%	2,310,253	8,910,416
1.3.1	GENERAL CONDITIONS	6,840,414	3.57	10	40	0.36	1.43	1.249%	3.57%	2,394,348	9,234,762
1.3.13	SPECIAL CONSTRUCTION	59,161,216	30.87	10	40	3.09	12.35	10.806%	30.87%	20,708,179	79,869,395
1.5.2	PROCUREMENT FEES	660,016	0.34	10	40	0.03	0.14	0.121%	0.34%	231,025	891,041
	ESCALATION	93,322,948	48.70	10	40	4.87	19.48	17.045%	48.70%	32,665,798	125,988,746
SUBTOTAL		191,625,422	100.00					35.000%			
CALCULATED CONTINGENCY		67,068,898									
RESULTANT TEC		258,694,320									
ROUNDED TEC		258,700,000									
PROJECT CONTINGENCY		67,074,578						35.00%			
MANAGEMENT RESERVE		13,465,653									
CONTINGENCY		53,608,925									
TOTAL ESTIMATED COST		258,700,000								67,074,578	258,700,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%

Experimental/Special Conditions.....Up to 50%

Conceptual 15% - 25%

Experimental/Special Conditions.....Up to 40%

TITLE I 10% - 20%

TITLE II 5% - 15%

TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLEAN FILL; ESCALATED

CLEAN BINS W/ ROBOTS - FLOOR

PROCUREMENT FEE:

CONSTRUCTION =	\$133,323,293	
GFE =		
Subtotal	<u>\$133,323,293</u>	
FEE @ 1% =	\$133,323,293 * 0.01 =	\$1,333,233

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 10 yrs)

CONSTRUCTION OR		
CEILING * 10 YEARS =	\$5,000,000	
GFE =	\$0	
PROCUREMENT FEE =	<u>\$1,333,233</u>	
Subtotal	<u>\$6,333,233</u>	
FEE @ 23% =	\$6,333,233 * 0.23 =	\$1,456,644

PIF @ 5.5%

CONSTRUCTION =	\$66,001,630	
GFE =	\$0	
PROCUREMENT FEE =	<u>\$1,333,233</u>	
G&A =	<u>\$1,456,644</u>	
Subtotal	<u>\$68,791,507</u>	
FEE @ 5.5% =	\$68,791,507 * 0.055 =	\$3,783,533

TOTAL PROCUREMENT FEE:	\$1,333,233
TOTAL G&A FEE:	\$1,456,644
TOTAL PIF:	\$3,783,533

Lockheed Martin Idaho Technologies Co.
COST ESTIMATE SUMMARY

Rev. 6-96
 PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
 LDUA (Risk Based Estimates)**
 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-D-E2**
 PREPARED BY: **S. L. Coward**
 REPORT NAME: **Cost Estimate Summary**

DATE: **28-Jan-1998**
 TIME: **12:15:23**
 CHECKED BY: **SNB**
 APPR'D BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$4,423,992
1.1.1	DESIGN ENGINEERING TITLE I & II	2,083,513	937,581	3,021,094
1.1.2	TITLE III INSPECTION	694,504	708,394	1,402,898
1.2	<u>MANAGEMENT COSTS</u>			>> \$11,565,214
1.2.1	PROJECT MANAGEMENT	3,449,729	3,139,253	6,588,982
1.2.2	CONSTRUCTION MANAGEMENT	2,463,481	2,512,751	4,976,232
1.3	<u>CONSTRUCTION</u>			>> \$28,058,000
1.3.1	GENERAL CONDITIONS	1,831,085	1,867,707	3,698,792
1.3.13	SPECIAL CONSTRUCTION	12,059,014	12,300,194	24,359,208
1.5.2	PROCUREMENT FEES	138,901	141,679	>> \$280,580
	SUBTOTAL INCLUDING ESCALATION	22,720,227	21,607,559	>> \$44,327,786
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$2,833,858
	CONTINGENCY			>> \$12,638,356
	TOTAL ESTIMATED COST			>> \$59,800,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 16.00%

CONTINGENCY= 34.90%

DATE 28-Jan-1998

REPORT NAME: Detail Cost Estimate Sheet

[illegible]

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-D-E2

PREPARED BY: **S. L. Coward**

PAGE # 2

DATE 28-Jan-1998

TIME: 12:15:25

REPORT NAME: Detail Cost Estimate Sheet

[illegible]

Rev 6-96
 PROJECT NAME: ICPP Bin Set Closure (EIS Study)
 LDUA (Risk Based Estimates)
 LOCATION 1: ICPP
 REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
 PROJECT NO.: 2423-D-E2
 PREPARED BY: S. L. Coward

DATE 28-Jan-1998
 TIME: 12:15:25
 REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.13	SPECIAL CONSTRUCTION Design of Modifications for add'l Units	6	EA		GEM	0.000					450,000	450,000
	INSTALLATION OF CLEANING UNIT:											
	Install Robotic Units	50	EACH		SKWK GEM	200.000	10,000	331,100				331,100
	Install and Shield Unit Hose/Tubes (Mods, Electr., etc.) - Allowance	50	EA	5,000.00	SKWK GEM	200.000	10,000	331,100		250,000		581,100
	Systems Integration	1	LS		GEM	0.000					100,000	100,000
	Shielding and Retrieval Area	7	EA		GEM	0.000					350,000	350,000
	CAP 18" DIA. HOLES - ASSUME Holes were capped in Floor Estimate	50	EA		SKWK GEM	40.000	2,000	66,220				66,220
	CAP 6" DIAMETER HOLES - Assume Holes were capped in Floor Estimate	50	EA		SKWK GEM	24.000	1,200	39,732				39,732
	OPERATION OF CALCINE RETRIEVAL	19	FTE		SKWK GEM	828.000	15,732	520,887				520,887
	SPECIAL CONSTRUCTION S/T						38,932	\$1,289,039		\$250,000	\$8,450,000	\$9,989,039
	PROJECT SUBTOTAL						<u>71,452</u>	<u>\$2,780,112</u>	<u>\$0</u>	<u>\$250,000</u>	<u>\$17,141,227</u>	<u>\$20,171,339</u>

PROJECT NAME: ICPP Bin Set Closure (EIS Stud
LDUA (Risk Based Estimates)

TYPE OF ESTIMATE: Planning
PROJECT NO: 2423-D-E2
PREPARED BY: S. L. Coward

DATE: 28-Jan-1998
TIME: 12:15:18

LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	2,083,513	4.70	10	40	0.47	1.88	1.645%	4.70%	727,231	2,810,744
1.1.2	TITLE III INSPECTION	694,504	1.57	10	40	0.16	0.63	0.548%	1.57%	242,410	936,914
1.2.1	PROJECT MANAGEMENT	3,449,729	7.78	10	40	0.78	3.11	2.724%	7.78%	1,204,097	4,653,826
1.2.2	CONSTRUCTION MANAGEMENT	2,463,481	5.56	10	40	0.56	2.22	1.945%	5.56%	859,856	3,323,337
1.3.1	GENERAL CONDITIONS	1,831,085	4.13	10	40	0.41	1.65	1.446%	4.13%	639,124	2,470,209
1.3.13	SPECIAL CONSTRUCTION	12,059,014	27.20	10	40	2.72	10.88	9.521%	27.20%	4,209,090	16,268,104
1.5.2	PROCUREMENT FEES	138,901	0.31	10	40	0.03	0.13	0.110%	0.31%	48,482	187,383
	ESCALATION	21,607,559	48.74	10	40	4.87	19.50	17.061%	48.74%	7,541,924	29,149,483
	SUBTOTAL	44,327,786	100.00					35.000%			
	CALCULATED CONTINGENCY	15,514,725									
	RESULTANT TEC	59,842,511									
	ROUNDED TEC	59,800,000									
	PROJECT CONTINGENCY	15,472,214						34.90%			
	MANAGEMENT RESERVE	2,833,858									
	CONTINGENCY	12,638,356									
	TOTAL ESTIMATED COST	59,800,000								15,472,214	59,800,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLEAN FILL; ESCALATED
CLEAN BINS W/ ROBOTS - WALLS

PROCUREMENT FEE:

CONSTRUCTION =	\$28,058,000	
GFE =		
Subtotal	\$28,058,000	
FEE @ 1% =	\$28,058,000 * 0.01 =	\$280,580

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 10 yrs)

CONSTRUCTION OR		
CEILING * 10 YEARS =	\$5,000,000	
GFE =	\$0	
PROCUREMENT FEE =	\$280,580	
Subtotal	\$5,280,580	
FEE @ 23% =	\$5,280,580 * 0.23 =	\$1,214,533

PIF @ 5.5%

CONSTRUCTION =	\$13,890,099	
GFE =	\$0	
PROCUREMENT FEE =	\$280,580	
G&A =	\$1,214,533	
Subtotal	\$15,385,212	
FEE @ 5.5% =	\$15,385,212 * 0.055 =	\$846,187

TOTAL PROCUREMENT FEE:	\$280,580
TOTAL G&A FEE:	\$1,214,533
TOTAL PIF:	\$846,187

COST ESTIMATE SUMMARY

Rev. 6-96
 PROJECT NAME: ICPP Bin Set Closure (EIS Stud
 Pipe Crawler (Risk Based Estim
 LOCATION 1: ICPP
 REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
 PROJECT NO: 2423-E-E2
 PREPARED BY: S. L. Coward
 REPORT NAME: Cost Estimate Summary

DATE: 28-Jan-1998
 TIME: 12:18:20
 CHECKED BY: *SNB*
 APPR'D BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$3,248,427
1.1.1	DESIGN ENGINEERING	1,778,336	871,385	2,649,721
1.1.2	TITLE III INSPECTION	296,389	302,317	598,706
1.2	<u>MANAGEMENT COSTS</u>			>> \$5,337,719
1.2.1	PROJECT MANAGEMENT	2,167,699	1,972,606	4,140,305
1.2.2	CONSTRUCTION MANAGEMENT	592,779	604,635	1,197,414
1.3	<u>CONSTRUCTION</u>			>> \$11,974,144
1.3.1	GENERAL CONDITIONS	1,831,085	1,867,707	3,698,792
1.3.13	SPECIAL CONSTRUCTION	4,096,709	4,178,643	8,275,352
1.5.2	PROCUREMENT FEES	59,278	60,463	>> \$119,741
	SUBTOTAL INCLUDING ESCALATION	10,822,275	9,857,756	>> \$20,680,031
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$1,209,388
	CONTINGENCY			>> \$6,010,581
	TOTAL ESTIMATED COST			>> \$27,900,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 27.00%

CONTINGENCY= 34.91%

Rev 6-95

**PROJECT NAME: ICPP Bin Set Closure (EIS Study)
Pipe Crawler (Risk Based Estimates)**

TYPE OF ESTIMATE: Planning

DATE 28-Jan-1998

TIME: 12:18:22

LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

PROJECT NO.: 2423-E-E2
PREPARED BY: S. L. Coward

REPORT NAME: Detail Cost Estimate Sheet

[illegible]

DATE: 28-Jan-1998
TIME: 12:18:22
REPORT NAME: Detail Cost Estimate Sheet

[illegible]

Rev 6-96
PROJECT NAME: ICPP Bin Set Closure (EIS Study)
Pipe Crawler (Risk Based Estimates)
LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
PROJECT NO.: 2423-E-E2
PREPARED BY: S. L. Coward

DATE 28-Jan-1998
TIME: 12:18:22
REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.13	SPECIAL CONSTRUCTION Design, Approvals, Mock-ups, Proof of Process, etc.											
	Fabrication of Additional units	6	EA		GEM	0.000					420,000	420,000
	Design of Modifications for add'l units	6	EA		GEM	0.000					90,000	90,000
	INSTALLATION OF PIPE CRAWLER											
	Install Robotic Units	50	EACH		SKWK GEM	180.000	9,000	297,990				297,990
	Install and Shield Unit Hose/Tubes (Mods, Electr., etc.) - Allowance	50	EA	6,000.00	SKWK GEM	180.000	9,000	297,990		250,000		547,990
	Systems Integration	1	LS		GEM	0.000					100,000	100,000
	Shielding and Retrieval Area	7			GEM	0.000					350,000	350,000
	CAP 18" DIAMETER HOLES - ASSUME Holes Capped In Floor Estimate	50	EA		SKWK GEM	40.000	2,000	66,220				66,220
	CAP 6" DIAMETER HOLES - ASSUME Holes Capped In Floor Estimate	50	EA		SKWK GEM	24.000	1,200	39,732				39,732
	OPERATION OF CALCINE RETRIEVAL	19	FTE		SKWK GEM	515.000	9,785	323,981				323,981
	SPECIAL CONSTRUCTION S/T						30,985	\$1,025,913		\$250,000	\$1,760,000	\$3,035,913
	PROJECT SUBTOTAL						63,505	\$2,616,987	\$0	\$250,000	\$6,596,203	\$9,362,190

Lockheed Martin Idaho Technologies Co.
CONTINGENCY ANALYSIS

Rev 6-96

PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
Pipe Crawler (Risk Based Estim
ICPP**
 LOCATION 1:
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-E-E2**
 PREPARED BY: **S. L. Coward**

DATE: **28-Jan-1998**
 TIME: **12:18:16**

 REPORT NAME: **Contingency Analysis**

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING	1,778,336	8.60	10	40	0.86	3.44	3.010%	8.60%	620,866	2,399,202
1.1.2	TITLE III INSPECTION	296,389	1.43	10	40	0.14	0.57	0.502%	1.43%	103,478	399,867
1.2.1	PROJECT MANAGEMENT	2,167,699	10.48	10	40	1.05	4.19	3.669%	10.48%	756,803	2,924,502
1.2.2	CONSTRUCTION MANAGEMENT	592,779	2.87	10	40	0.29	1.15	1.003%	2.87%	206,955	799,734
1.3.1	GENERAL CONDITIONS	1,831,085	8.85	10	40	0.89	3.54	3.099%	8.85%	639,282	2,470,367
1.3.13	SPECIAL CONSTRUCTION	4,096,709	19.81	10	40	1.98	7.92	6.933%	19.81%	1,430,274	5,526,983
1.5.2	PROCUREMENT FEES	59,278	0.29	10	40	0.03	0.11	0.100%	0.29%	20,696	79,974
	ESCALATION	9,857,756	47.67	10	40	4.77	19.07	16.684%	47.67%	3,441,615	13,299,371
	SUBTOTAL	20,680,031	100.00					35.000%			
	CALCULATED CONTINGENCY	7,238,011									
	RESULTANT TEC	27,918,042									
	ROUNDED TEC	27,900,000									
	PROJECT CONTINGENCY	7,219,969						34.91%			
	MANAGEMENT RESERVE	1,209,388									
	CONTINGENCY	6,010,581									
	TOTAL ESTIMATED COST	27,900,000								7,219,969	27,900,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE
 Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLEAN FILL; ESCALATED

CLEAN BINS W/ ROBOTS - PIPING

PROCUREMENT FEE:

CONSTRUCTION =	\$11,974,144	
GFE =		
Subtotal	\$11,974,144	
FEE @ 1% =	\$11,974,144 * 0.01 =	\$119,741

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 10 yrs)

CONSTRUCTION OR CEILING * 10 YEARS =	\$ 5,000,000	
GFE =	\$0	
PROCUREMENT FEE =	\$119,741	
Subtotal	\$5,119,741	
FEE @ 23% =	\$5,119,741 * 0.23 =	\$1,177,541

PIF @ 5.5%

CONSTRUCTION =	\$5,927,794	
GFE =	\$0	
PROCUREMENT FEE =	\$119,741	
G&A =	\$1,177,541	
Subtotal	\$7,225,076	
FEE @ 5.5% =	\$7,225,076 * 0.055 =	\$397,379

TOTAL PROCUREMENT FEE:	\$119,741
TOTAL G&A FEE:	\$1,177,541
TOTAL PIF:	\$397,379

COST ESTIMATE SUMMARY

PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
Place Clean Grout in Bins**
LOCATION 1: **ICPP**
REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **Planning**
PROJECT NO: **2423-a1-e2**
PREPARED BY: **S. L. Coward**
REPORT NAME: **Cost Estimate Summary**

DATE: **28-Jan-1998**
TIME: **12:05:05**
CHECKED BY: **SMB**
APPR'D BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> <u>\$3,201,732</u>
1.1.1	DESIGN ENGINEERING	1,646,982	872,900	2,519,882
1.1.2	TITLE III INSPECTION	329,396	352,454	681,850
1.2	<u>MANAGEMENT COSTS</u>			>> <u>\$4,488,682</u>
1.2.1	PROJECT MANAGEMENT	1,547,020	1,577,960	3,124,980
1.2.2	CONSTRUCTION MANAGEMENT	658,793	704,909	1,363,702
1.3	<u>CONSTRUCTION</u>			>> <u>\$13,637,017</u>
1.3.1	GENERAL CONDITIONS	1,067,791	1,142,536	2,210,327
1.3.2	SITework	229,119	245,157	474,276
1.3.3	CONCRETE	5,291,021	5,661,393	10,952,414
1.5.2	PROCUREMENT FEES	65,879	70,491	>> <u>\$136,370</u>
	SUBTOTAL INCLUDING ESCALATION	10,836,001	10,627,800	>> <u>\$21,463,801</u>
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> <u>\$1,377,339</u>
	CONTINGENCY			>> <u>\$6,158,860</u>
	TOTAL ESTIMATED COST			>> <u>\$29,000,000</u>

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= **23.00%**

CONTINGENCY= **35.11%**

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-a1-e2

PREPARED BY: **S. L. Coward**

PAGE # 1

DATE 28-Jan-1998

TIME: 12:05:06

REPORT NAME: Detail Cost Estimate Sheet

[illegible]

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-a1-e2

PREPARED BY: **S. L. Coward**

PAGE # 2

DATE 28-Jan-1998

TIME: 12:05:06

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

DATE 28-Jan-1998

TIME: 12:05:06

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

Rev 8-96
PROJECT NAME: ICPP Bin Set Closure (EIS Study)
Place Clean Grout In Bins
LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
PROJECT NO.: 2423-a1-e2
PREPARED BY: S. L. Coward

DATE 28-Jan-1998
TIME: 12:05:06
REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
<u>1.3.3.1</u> MEMO:	<u>TANK GROUTING</u> Assume maximum quantity for 1 bin (Bin #6 or 7) and reuse											
	INSTALL AND REMOVE DROP TUBES (50 Bins) (Incl. 10% Waste)	3,650	LF		CONC GEN	0.500	1,825	58,455				58,455
	GROUT PLACEMENT & CLEANUP (Includes 10% Waste)	10,406	CY	80.00	CONC GEN	0.350	3,642	116,656		832,480		949,136
	GROUT OVER TANK MONITOR FEET	168	EA	80.00	CONC GEN	24.000	4,032	129,145		13,440		142,585
	TANK GROUTING S/T						9,499	\$304,256		\$859,560		\$1,163,816
<u>1.3.3.2</u>	<u>TANK LEAK MONITORS AND VENTILATION</u> TANK LEAK MONITORS	168	EA	10,000.00	CONC GEN	32.000	5,376	172,193		1,680,000		1,852,193
	TANK LEAK MONITORS AND VENTILATION S/T						5,376	\$172,193		\$1,680,000		\$1,852,193
	PROJECT SUBTOTAL						44,071	\$1,635,971	\$80,000	\$2,636,620	\$4,182,191	\$8,534,782

Rev 6-95
PROJECT NAME: ICPP Bin Set Closure (EIS Stud
Place Clean Grout in Bins
LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
PROJECT NO: 2423-a1-e2
PREPARED BY: S. L. Coward

DATE: 28-Jan-1998
TIME: 12:05:01

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING	1,646,982	7.67	10	40	0.77	3.07	2.686%	7.67%	578,275	2,225,257
1.1.2	TITLE III INSPECTION	329,396	1.53	10	40	0.15	0.61	0.537%	1.53%	115,655	445,051
1.2.1	PROJECT MANAGEMENT	1,547,020	7.21	10	40	0.72	2.88	2.523%	7.21%	543,177	2,090,197
1.2.2	CONSTRUCTION MANAGEMENT	658,793	3.07	10	40	0.31	1.23	1.074%	3.07%	231,310	890,103
1.3.1	GENERAL CONDITIONS	1,067,791	4.97	10	40	0.50	1.99	1.741%	4.97%	374,914	1,442,705
1.3.2	SITEWORK	229,119	1.07	10	40	0.11	0.43	0.374%	1.07%	80,446	309,565
1.3.3	CONCRETE	5,291,021	24.65	10	40	2.47	9.86	8.628%	24.65%	1,857,741	7,148,762
1.5.2	PROCUREMENT FEES	65,879	0.31	10	40	0.03	0.12	0.107%	0.31%	23,131	89,010
	ESCALATION	10,627,800	49.51	10	40	4.95	19.81	17.330%	49.51%	3,731,550	14,359,350
	SUBTOTAL	21,463,801	100.00					35.000%			
	CALCULATED CONTINGENCY	7,512,330									
	RESULTANT TEC	28,976,131									
	ROUNDED TEC	29,000,000									
	PROJECT CONTINGENCY	7,536,199						35.11%			
	MANAGEMENT RESERVE	1,377,339									
	CONTINGENCY	6,158,860									
	TOTAL ESTIMATED COST	29,000,000								7,536,199	29,000,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLEAN FILL; ESCALATED

FILL BINS W/ NRC CLEAN GROUT

PROCUREMENT FEE:

CONSTRUCTION =	\$13,637,017	
GFE =		
Subtotal	\$13,637,017	
FEE @ 1% =	\$13,637,017 * 0.01 =	\$136,370

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 4 yrs)

CONSTRUCTION OR		
CEILING * 4 YEARS =	\$2,000,000	
GFE =	\$0	
PROCUREMENT FEE =	\$136,370	
Subtotal	\$2,136,370	
FEE @ 23% =	\$2,136,370 * 0.23 =	\$491,365

PIF @ 5.5%

CONSTRUCTION =	\$6,587,931	
GFE =	\$0	
PROCUREMENT FEE =	\$136,370	
G&A =	\$491,365	
Subtotal	\$7,215,666	
FEE @ 5.5% =	\$7,215,666 * 0.055 =	\$396,862

TOTAL PROCUREMENT FEE:	\$136,370
TOTAL G&A FEE:	\$491,365
TOTAL PIF:	\$396,862

Lockheed Martin Idaho Technologies Co.

COST ESTIMATE SUMMARY

Rev. 6-96

PROJECT NAME: ICPP Bin Set Closure
D&D of Equipment
LOCATION 1: INEEL / ICPP
REQUESTOR: B. C. Spaulding

TYPE OF ESTIMATE: Planning
PROJECT NO: 2423D&D
PREPARED BY: S.L. Coward/smb
REPORT NAME: Cost Estimate Summary

DATE: 28-Jan-1998
TIME: 09:58:46
CHECKED BY: *SMB*
APPR'D BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
<u>1.1</u>	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> <u>\$0</u>
1.1.1	DESIGN ENGINEERING TITLE I & II	0	0	0
1.1.2	TITLE III INSPECTION	0	0	0
<u>1.2</u>	<u>MANAGEMENT COSTS</u>			>> <u>\$2,561,125</u>
1.2.1	PROJECT MANAGEMENT	868,178	1,692,947	2,561,125
1.2.2	CONSTRUCTION MANAGEMENT	0	0	0
<u>1.3</u>	<u>CONSTRUCTION</u>			>> <u>\$34,543,647</u>
1.3.13	SPECIAL CONSTRUCTION	11,709,711	22,833,936	34,543,647
1.5.2	PROCUREMENT FEES	117,097	228,339	>> <u>\$345,436</u>
	SUBTOTAL INCLUDING ESCALATION	12,694,986	24,755,222	>> \$37,450,208
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$0
	CONTINGENCY			>> \$13,149,792
	TOTAL ESTIMATED COST			>> \$50,600,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 0.00%

CONTINGENCY= 35.11%

Rev 6-96

**PROJECT NAME: ICPP Bin Set Closure
D&D of Equipment**

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423D&D

DATE 28-Jan-1998

TIME: 10:13:24

LOCATION 1: INEEL / ICPP
REQUESTOR: B. C. Spaulding

PREPARED BY: S.L.Coward/smb

REPORT NAME: Detail Cost Estimate Sheet

[illegible]

DATE 28-Jan-1998

REPORT NAME: **Detail Cost Estimate Sheet**

PREPARED BY: S.L.Coward/smb

[illegible]

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423D&D

PREPARED BY: S.L.Coward/smb

PAGE # 4

DATE 28-Jan-1998

TIME: 10:13:24

REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.13	SPECIAL CONSTRUCTION											
	Grouting Manifolds - Class C - Allowance - 8 ea @ 300 sf	1	lot			0.000					537,274	537,274
	LDUA's - Allowance - 7 ea @ 150 sf	1	lot			0.000					209,873	209,873
	Pipe Crawler Robots - Allowance - 7 ea @ 150 sf	1	lot			0.000					209,873	209,873
	Tractor Robots - Allowance - 53 ea @ 250 sf	1	lot			0.000					2,648,393	2,648,393
	Misc Robot Wire and Hose Lines - Allowance - 1 ea @ 1000 sf	1	lot			0.000					199,879	199,879
	Waste Disposal - quantities as stated in EDF											
	- Solid Waste	500	cf			0.000					540	540
	- Radioactive Waste	10,000	cf			0.000					3,000,000	3,000,000
	- Mixed Waste	2,200	cf			0.000					275,000	275,000
	SPECIAL CONSTRUCTION S/T						0				\$*,***,***	\$11,709,711
	PROJECT SUBTOTAL						0	\$0	\$0	\$0	\$12,577,889	\$12,577,889

Lockheed Martin Idaho Technologies Co.

Rev 6-96

CONTINGENCY ANALYSIS

PROJECT NAME: ICPP Bin Set Closure
 D&D of Equipment
 LOCATION 1: INEEL / ICPP
 REQUESTOR: B. C. Spaulding

TYPE OF ESTIMATE: Planning
 PROJECT NO: 2423D&D
 PREPARED BY: S.L.Coward/smb

DATE: 28-Jan-1998
 TIME: 09:58:43

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.1.2	TITLE III INSPECTION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.2.1	PROJECT MANAGEMENT	868,178	2.32	10	40	0.23	0.93	0.811%	2.32%	304,841	1,173,019
1.2.2	CONSTRUCTION MANAGEMENT	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.3.13	SPECIAL CONSTRUCTION	11,709,711	31.27	10	40	3.13	12.51	10.944%	31.27%	4,111,600	15,821,311
1.5.2	PROCUREMENT FEES	117,097	0.31	10	40	0.03	0.13	0.109%	0.31%	41,116	158,213
	ESCALATION	24,755,222	66.10	10	40	6.61	26.44	23.136%	66.10%	8,692,235	33,447,457
	SUBTOTAL	37,450,208	100.00					35.000%			
	CALCULATED CONTINGENCY	13,107,573									
	RESULTANT TEC	50,557,781									
	ROUNDED TEC	50,600,000									
	PROJECT CONTINGENCY	13,149,792						35.11%			
	MANAGEMENT RESERVE	0									
	CONTINGENCY	13,149,792									
	TOTAL ESTIMATED COST	50,600,000								13,149,792	50,600,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
 Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
 TITLE I 10% - 20%
 TITLE II 5% - 15%
 TITLE III/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
RISK BASED CLEAN CLOSURE; CLEAN FILL; ESCALATED

D&D OF EQUIPMENT

PROCUREMENT FEE:

CONSTRUCTION =	\$34,543,647	
GFE =		
Subtotal	<u>\$34,543,647</u>	
FEE @ 1% =	\$34,543,647 * 0.01 =	\$345,436

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 1 yr)

CONSTRUCTION OR		
CEILING * 1 YEARS =	\$500,000	
GFE =	\$0	
PROCUREMENT FEE =	<u>\$345,436</u>	
Subtotal	<u>\$845,436</u>	
FEE @ 23% =	\$845,436 * 0.23 =	\$194,450

PIF @ 5.5%

CONSTRUCTION =	\$11,709,711	
GFE =	\$0	
PROCUREMENT FEE =	<u>\$345,436</u>	
G&A =	<u>\$194,450</u>	
Subtotal	<u>\$12,249,598</u>	
FEE @ 5.5% =	\$12,249,598 * 0.055 =	\$673,728

TOTAL PROCUREMENT FEE:	\$345,436
TOTAL G&A FEE:	\$194,450
TOTAL PIF:	\$673,728

ID	Task Name	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	20
1	PERMITTING	1/2				1/1						
2	DESIGN - GROUT VAULTS		1/1			1/1						
3	MANAGEMENT - GROUT VAULTS		1/1									
4	DESIGN - CLEAN BIN WALLS/PIPING	3				1/1						
5	MANAGEMENT - CLEAN WALLS/PIPING	3										
6	DESIGN - CLEAN BIN FLOORS	4/1				4/1						
7	MANAGEMENT - CLEAN BIN FLOORS	4/1										
8	DESIGN - GROUT BINS		7/2			7/1						
9	MANAGEMENT - GROUT BINS		7/2									
10	BIN SET #1											
11	RETRIEVAL COMPLETE											
12	GROUT VAULTS					1/1						
13	CLEAN BIN WALLS/PIPING					1/1						
14	CLEAN BIN FLOORS					4/2						
15	RCRA CLOSURE					7/2						
16	GROUT BINS					7/3						
17	BIN SET #5											
18	RETRIEVAL COMPLETE											
19	GROUT VAULTS											
20	CLEAN BIN WALLS/PIPING											
21	CLEAN BIN FLOORS											
22	RCRA CLOSURE											
23	GROUT BINS											
24	BIN SET #6											
25	RETRIEVAL COMPLETE											
26	GROUT VAULTS											
27	CLEAN BIN WALLS/PIPING											
28	CLEAN BIN FLOORS											
29	RCRA CLOSURE											
30	GROUT BINS											
31	BIN SET #2											
32	RETRIEVAL COMPLETE											

Project: 2423-3.MPP
Date: Tue 1/6/98

Task

Progress

Milestone

Summary

Rolled Up Task

Rolled Up Milestone

IRE - "CLEAN" GROUT

Rolled Up Progress

COST ESTIMATE SUMMARY
UNESCALATED

ICPP BIN SET CLOSURE CLOSURE TO RCRA LANDFILL STANDARDS; CLASS C FILL Requestor: B. C. Spaulding	Planning Estimate Estimate #2423 Prepared by: S. L. Coward	<div>1/28/98</div> <div>Checked by: </div> <div>Approved by: </div>
Regulatory Compliance	19,500,000	
Fill Vaults with Clean Grout	12,400,000	
Clean Bins with Robots		
Floor	82,600,000	
Fill Bins with NRC Class C Grout	30,100,000	
D&D of Equipment	17,000,000	
TOTAL	\$161,600,000	
USE	\$162,000,000	

RCRA CLOSURE TO LANDFILL STANDARDS – NRC CLASS C GROUT

DESCRIPTION	BIN SET #1	BIN SET #5	BIN SET #7	BIN SET #6	BIN SET #3	BIN SET #4	BIN SET #2
Scheduled Completion	(1/1/14)	(4/1/18)	(12/1/22)	(11/1/26)	(8/1/28)	(2/1/31)	(5/1/31)
ASSUME: Wait 6 Months until Start of Closure							
Permitting (5 Years)	7/1/9–7/1/14						
Grout Vaults "Clean" (Assume 1 Year)							
ED&I (2 Yrs)	7/1/12–7/1/14						
Management	7/1/12–11/1/32						
Construction	7/1/14–7/1/15	10/1/18–10/1/19	6/1/23–6/1/24	5/1/27–5/1/28	2/1/29–2/1/30	8/1/31–8/1/32	11/1/31–11/1/32
Clean Bin Floors with Robot	(3 Months)	(15 Months)	(25 Months)	(24 Months)	(17 Months)	(7 Months)	(13 Months)
ED&I (4 Yrs)	7/1/10–7/1/14						
Management	7/1/10–12/1/32						
Construction	7/1/14–10/1/14	10/1/18–1/1/20	6/1/23–7/1/25	5/1/27–5/1/29	2/1/29–7/1/30	8/1/31–3/1/32	11/1/31–12/1/32
RCRA CLOSURE							
Grout Bins "NRC Class C"	(3 Months)	(11 Months)	(18 Months)	(17 Months)	(12 Months)	(6 Months)	(10 Months)
ED&I (3 Yrs)	1/1/21–1/1/24						
Management	1/1/21–10/1/33						
Construction	1/1/24–4/1/24	4/1/24–3/1/25	7/1/25–1/1/27	5/1/29–10/1/30	10/1/30–10/1/31	3/1/32–9/1/32	12/1/32–10/1/33

ASSUMPTIONS:

- 1) Installation of NRC Class C Grout into bins are based on individual schedules for each bin set. These schedules assume everything is in place at start-up date for pouring, and allows no flexibility for error or downtime.
- 2) More than 1 crew could be utilized simultaneously for pouring the "clean" grout into the vaults.
- 3) More than 1 crew could be utilized simultaneously for cleaning the separate bins.
- 4) Installation of "clean" grout into vaults will average 1 year per vault.
- 5) Cleaning of bin floors are based on individual bin pro-rated calcine retrieval volumes to total volume. These schedules assume mob/demob, installation of robotic units, and any modifications of bins will be completed and bins will be ready for retrieval.

COST ESTIMATE SUMMARY

Rev. 6-96

PROJECT NAME: Permitting/Documentation
Risk Based - NRC Class C
LOCATION 1: INEEL/ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: PLANNING
PROJECT NO: 2423-bD
PREPARED BY: S. L. Coward
REPORT NAME: Cost Estimate Summary

DATE: 27-Jan-1998
TIME: 19:51:07
CHECKED BY: *SMB*
APPRD BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
<u>1.1</u>	<u>CONCEPTUAL</u>			>> \$0
1.1.1	CONCEPTUAL DESIGN	0	0	0
<u>1.2</u>	<u>MANAGEMENT</u>			>> \$2,374,382
1.2.1	PM FOR PROJECT DEVELOPMENT	1,896,534	0	1,896,534
1.2.2	PROJECT EXECUTION	477,848	0	477,848
<u>1.3</u>	<u>PERMITTING</u>			>> \$11,946,206
1.3.1	PERMITTING	11,946,206	0	11,946,206
1.5.2	PROCUREMENT FEES	119,462	0	>> \$119,462
	SUBTOTAL INCLUDING ESCALATION	14,440,050	0	>> \$14,440,050
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$1,206,567
	CONTINGENCY			>> \$3,853,383
	TOTAL ESTIMATED COST			>> \$19,500,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 0.00%

CONTINGENCY= 35.04%

DETAILED COST ESTIMATE SHEET

PAGE # 1

PROJECT NAME: **Permitting/Documentation
Risk Based - NRC Class C**

LOCATION 1: **INEEL/ICPP**

REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **PLANNING**
PROJECT NO.: **2423-bD**
PREPARED BY: **S. L. Coward**

DATE: 27-Jan-1998
TIME: 19:51:09
REPORT NAME: Detail Cost Estimate Sheet

[illegible]

DATE: 27-Jan-1998
TIME: 19:51:09
REPORT NAME: Detail Cost Estimate Sheet

[illegible]

Rev 6-96
PROJECT NAME: Permitting/Documentation
Risk Based - NRC Class C
LOCATION 1: INEEL/ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: PLANNING
PROJECT NO.: 2423-bD
PREPARED BY: S. L. Coward

DATE 27-Jan-1998
TIME: 19:51:09
REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	SIC (OTHER 1)	TOTAL COST
	PROJECT SUBTOTAL						162,280	\$9,106,206	\$0	\$0	\$5,214,382	\$14,320,588

Lockheed Martin Idaho Technologies Co.

Rev 6-95

CONTINGENCY ANALYSIS

PROJECT NAME: **Permitting/Documentation**
 Risk Based - NRC Class C
 LOCATION 1: **INEEL/ICPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **PLANNING**
 PROJECT NO: **2423-bD**
 PREPARED BY: **S. L. Coward**

DATE: **27-Jan-1998**
 TIME: **19:51:03**

 REPORT NAME: **Contingency Analysis**

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	CONCEPTUAL DESIGN	0	0.00	10	40	0.00	0.00	0.000%	0.00%	0	0
1.2.1	PM FOR PROJECT DEVELOPMENT	1,896,534	13.13	10	40	1.31	5.25	4.597%	13.13%	664,566	2,561,100
1.2.2	PROJECT EXECUTION	477,848	3.31	10	40	0.33	1.32	1.158%	3.31%	167,443	645,291
1.3.1	PERMITTING	11,946,206	82.73	10	40	8.27	33.09	28.955%	82.73%	4,186,080	16,132,286
1.5.2	PROCUREMENT FEES	119,462	0.83	10	40	0.08	0.33	0.290%	0.83%	41,861	161,323
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
SUBTOTAL		14,440,050	100.00					35.000%			
CALCULATED CONTINGENCY		5,054,017									
RESULTANT TEC		19,494,067									
ROUNDED TEC		19,500,000									
PROJECT CONTINGENCY		5,059,950						35.04%			
MANAGEMENT RESERVE		1,206,567									
CONTINGENCY		3,853,383									
TOTAL ESTIMATED COST		19,500,000								5,059,950	19,500,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
 Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
 TITLE I 10% - 20%
 TITLE II 5% - 15%
 TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
CLOSURE TO RCRA LANDFILL STANDARDS; CLASS C FILL; UNESCALATED

REGULATORY COMPLIANCE

PROCUREMENT FEE:

CONSTRUCTION =	\$11,946,206	
GFE =		
Subtotal	\$11,946,206	
FEE @ 1% =	\$11,946,206 * 0.01 =	\$119,462

G&A @ 23% (with a ceiling of \$500,000 imposed per year , 5 Years)

CONSTRUCTION OR		
CEILING * # OF YEARS =	\$2,500,000	
GFE =	\$0	
PROCUREMENT FEE =	\$119,462	
Subtotal	\$2,619,462	
FEE @ 23% =	\$2,619,462 * 0.23 =	\$602,476

PIF @ 5.5%

CONSTRUCTION =	\$11,946,206	
GFE =	\$0	
PROCUREMENT FEE =	\$119,462	
G&A =	\$602,476	
Subtotal	\$12,668,144	
FEE @ 5.5% =	\$12,668,144 * 0.055 =	\$696,748

TOTAL PROCUREMENT FEE:	\$119,462
TOTAL G&A FEE:	\$602,476
TOTAL PIF:	\$696,748

Lockheed Martin Idaho Technologies Co.

Rev. 6-96

PROJECT NAME: ICPP Bin Set Closure (EIS Stud
 Place Clean Grout in Vault
 LOCATION 1: ICPP
 REQUESTOR: Bryan Spaulding

COST ESTIMATE SUMMARY

TYPE OF ESTIMATE: Planning
 PROJECT NO: 2423-A2
 PREPARED BY: S. L. Coward
 REPORT NAME: Cost Estimate Summary

DATE: 27-Jan-1998
 TIME: 19:54:43
 CHECKED BY: *SMB*
 APPRD BY:

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
<u>1.1</u>	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> <u>\$1,589,774</u>
1.1.1	DESIGN ENGINEERING	1,324,812	0	1,324,812
1.1.2	TITLE III INSPECTION	264,962	0	264,962
<u>1.2</u>	<u>MANAGEMENT COSTS</u>			>> <u>\$2,216,357</u>
1.2.1	PROJECT MANAGEMENT	1,686,432	0	1,686,432
1.2.2	CONSTRUCTION MANAGEMENT	529,925	0	529,925
<u>1.3</u>	<u>CONSTRUCTION</u>			>> <u>\$5,299,250</u>
1.3.1	GENERAL CONDITIONS	1,067,791	0	1,067,791
1.3.2	SITEWORK	0	0	0
1.3.3	CONCRETE	4,231,459	0	4,231,459
1.5.2	PROCUREMENT FEES	52,992	0	>> <u>\$52,992</u>
	SUBTOTAL INCLUDING ESCALATION	9,158,373	0	>> <u>\$9,158,373</u>
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> <u>\$535,224</u>
	CONTINGENCY			>> <u>\$2,706,403</u>
	TOTAL ESTIMATED COST			>> <u>\$12,400,000</u>

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 30.00%

CONTINGENCY= 35.40%

DATE 27-Jan-1998

REPORT NAME: **Detail Cost Estimate Sheet**

PREPARED BY: **S. L. Coward**

TYPE OF ESTIMATE: Planning

DATE **27-Jan-1998**

PROJECT NO.: 2423-A2

TIME: 19:54:45

PREPARED BY: S. L. Cov

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

Rev 6-96

LOCATION 1: ICPP

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-A2

PREPARED BY: S. L. Coward

PAGE # 3

DATE 27-Jan-1998

TIME: 19:54:45

REPORT NAME: Detail Cost Estimate Sheet

[illegible]

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-A2

PREPARED BY: S. L. Coward

DATE 27-Jan-1998

TIME: 19:54:45

REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MAT'L UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
3.3.1 EMO:	VAULT GROUTING Assume 4 tubes x 7 vaults plus 10% waste											
	GROUT PLACEMENT & CLEANUP (Includes 10% Waste)	22,946	CY	80.00	CONC GEN	0.350	8,031	257,236		1,835,680		2,092,916
	VAULT GROUTING S/T						9,093	\$291,236		\$1,843,480		\$2,134,716
3.3.2	BIN SET VAULT ACCESS HOLES CORE DRILL 18" HOLE THROUGH VAULT ROOF (4 PLACES/VAULT)	28	EA	1,000.00	CONC GEN	100.000	2,800	89,684		28,000		117,684
	SHIELDING AROUND VAULT HOLES	28	EA	5,000.00	CONC GEN	24.000	672	21,524		140,000		161,524
	CAP 18" DIAMETER HOLES	28	EA	1,800.00	CONC GEN	40.000	1,120	35,874		50,400		86,274
	BIN SET VAULT ACCESS HOLES S/T						4,592	\$147,082		\$218,400		\$365,482
	PROJECT SUBTOTAL						36,012	\$1,377,853	\$80,000	\$2,097,960	\$3,806,131	\$7,361,944

Lockheed Martin Idaho Technologies Co.

Rev 6-96

PROJECT NAME: ICPP Bin Set Closure (EIS Stud
 Place Clean Grout in Vault
 LOCATION 1: ICPP
 REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
 PROJECT NO: 2423-A2
 PREPARED BY: S. L. Coward

DATE: 27-Jan-1998
 TIME: 19:54:39

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING	1,324,812	14.47	10	40	1.45	5.79	5.063%	14.47%	468,920	1,793,732
1.1.2	TITLE III INSPECTION	264,962	2.89	10	40	0.29	1.16	1.013%	2.89%	93,784	358,746
1.2.1	PROJECT MANAGEMENT	1,686,432	18.41	10	40	1.84	7.37	6.445%	18.41%	596,916	2,283,348
1.2.2	CONSTRUCTION MANAGEMENT	529,925	5.79	10	40	0.58	2.31	2.025%	5.79%	187,568	717,493
1.3.1	GENERAL CONDITIONS	1,067,791	11.66	10	40	1.17	4.66	4.081%	11.66%	377,947	1,445,738
1.3.2	SITWORK	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.3.3	CONCRETE	4,231,459	46.20	10	40	4.62	18.48	16.171%	46.20%	1,497,735	5,729,194
1.5.2	PROCUREMENT FEES	52,992	0.58	10	40	0.06	0.23	0.203%	0.58%	18,757	71,749
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
SUBTOTAL		9,158,373	100.00					35.000%			
CALCULATED CONTINGENCY		3,205,431									
RESULTANT TEC		12,363,804									
ROUNDED TEC		12,400,000									
PROJECT CONTINGENCY		3,241,627						35.40%			
MANAGEMENT RESERVE		535,224									
CONTINGENCY		2,706,403									
TOTAL ESTIMATED COST		12,400,000								3,241,627	12,400,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE
 Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
 Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
 TITLE I 10% - 20%
 TITLE II 5% - 15%
 TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
CLOSURE TO RCRA LANDFILL STANDARDS; CLASS C FILL; UNESCALATED
FILL VAULTS W/ CLEAN GROUT

PROCUREMENT FEE:

CONSTRUCTION =	\$5,299,250	
GFE =		
Subtotal	\$5,299,250	
FEE @ 1% =	\$5,299,250 • 0.01 =	\$52,993

G&A @ 23% (with a ceiling of \$500,000 imposed per year , 7 Years)

CONSTRUCTION OR		
CEILING * # OF YEARS =	\$3,500,000	
GFE =	\$0	
PROCUREMENT FEE =	\$52,993	
Subtotal	\$3,552,993	
FEE @ 23% =	\$3,552,993 • 0.23 =	\$817,188

PIF @ 5.5%

CONSTRUCTION =	\$5,299,250	
GFE =	\$0	
PROCUREMENT FEE =	\$52,993	
G&A =	\$817,188	
Subtotal	\$6,169,431	
FEE @ 5.5% =	\$6,169,431 • 0.055 =	\$339,319

TOTAL PROCUREMENT FEE:	\$52,993
TOTAL G&A FEE:	\$817,188
TOTAL PIF:	\$339,319

Lockheed Martin Idaho Technologies Co.

Rev. 6-96

COST ESTIMATE SUMMARY

 PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
Tractor (RCRA Estimates)**

 LOCATION 1: **ICPP**

 REQUESTOR: **Bryan Spaulding**

 TYPE OF ESTIMATE: **Planning**

 PROJECT NO: **2423-C**

 PREPARED BY: **S. L. Coward**

 REPORT NAME: **Cost Estimate Summary**

 DATE: **27-Jan-1998**

 TIME: **19:21:06**

CHECKED BY:

APPRD BY:

SMB

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$8,170,841
1.1.1	DESIGN ENGINEERING TITLE I & II	6,128,131	0	6,128,131
1.1.2	TITLE III INSPECTION	2,042,710	0	2,042,710
1.2	<u>MANAGEMENT COSTS</u>			>> \$11,752,676
1.2.1	PROJECT MANAGEMENT	7,667,255	0	7,667,255
1.2.2	CONSTRUCTION MANAGEMENT	4,085,421	0	4,085,421
1.3	<u>CONSTRUCTION</u>			>> \$40,854,211
1.3.1	GENERAL CONDITIONS	6,840,414	0	6,840,414
1.3.13	SPECIAL CONSTRUCTION	34,013,797	0	34,013,797
1.5.2	PROCUREMENT FEES	408,542	0	>> \$408,542
	SUBTOTAL INCLUDING ESCALATION	61,186,270	0	>> \$61,186,270
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$4,126,275
	CONTINGENCY			>> \$17,287,455
	TOTAL ESTIMATED COST			>> \$82,600,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 20.00%

CONTINGENCY= 35.00%

Rev 6-96

Tractor (RCRA Estimates)

LOCATION 1- ICPP

REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-C

PREPARED BY: **S. L. Coward**

PAGE # 1

DATE **27-Jan-1998**

TIME: 19:21:08

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

PAGE # 2

TYPE OF ESTIMATE: Planning

DATE 27-Jan-1998

PROJECT NO.: 2423-C

TIME: 19:21:08

PREPARED BY: S. L. Coward

REPORT NAME: Detail Cost Estimate Sheet

[illegible]

Lockheed Martin Idaho Technologies Co.
Rev 6-96
PROJECT NAME: ICPP Bin Set Closure (EIS Study)
Tractor (RCRA Estimates)
LOCATION 1: ICPP
QUESTOR: Bryan Spaulding

DETAILED COST ESTIMATE SHEET
TYPE OF ESTIMATE: Planning
PROJECT NO.: 2423-C
PREPARED BY: S. L. Coward

PAGE # 3
DATE 27-Jan-1998
TIME: 19:21:08
REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.13	SPECIAL CONSTRUCTION Design of Development of Modifications to Add'l Units	52	EA		GEN	0.000					1,300,000	1,300,000
	INSTALLATION OF CLEANING UNIT:											
	Install Robotic Units	50	EACH		SKWK GEN	160.000	8,000	264,880				264,880
	Install and Shield Unit Hose/Tubes (Mods, Electr., etc.) - Allowance	50	EA	5,000.00	SKWK GEN	160.000	8,000	264,880		250,000		514,880
	Systems Integration	1	LS		GEN	0.000					75,000	75,000
	CAP 18" DIAMETER HOLES	100	EA	1,800.00	SKWK GEN	40.000	4,000	132,440		180,000		312,440
	CAP 6" DIAMETER HOLES	100		500.00	SKWK GEN	24.000	2,400	79,464		50,000		129,464
	OPERATION OF CALCINE RETRIEVAL -	19	FTE		SKWK GEN	11530.0	219,070	7,253,408				7,253,408
	SPECIAL CONSTRUCTION S/T						241,470	\$7,995,072		\$480,000	\$*,***,***	\$25,850,072
	PROJECT SUBTOTAL						308,345	\$10,971,765	\$0	\$480,000	\$40,139,617	\$51,591,372

Lockheed Martin Idaho Technologies Co.
CONTINGENCY ANALYSIS

Rev 6-96

 PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
Tractor (RCRA Estimates))**

 TYPE OF ESTIMATE: **Planning**

 DATE: **27-Jan-1998**

 LOCATION 1: **ICPP**

 PROJECT NO: **2423-C**

 TIME: **19:21:02**

 REQUESTOR: **Bryan Spaulding**

 PREPARED BY: **S. L. Coward**

 REPORT NAME: **Contingency Analysis**

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	6,128,131	10.02	10	40	1.00	4.01	3.505%	10.02%	2,144,699	8,272,830
1.1.2	TITLE III INSPECTION	2,042,710	3.34	10	40	0.33	1.34	1.168%	3.34%	714,900	2,757,610
1.2.1	PROJECT MANAGEMENT	7,667,255	12.53	10	40	1.25	5.01	4.386%	12.53%	2,683,356	10,350,611
1.2.2	CONSTRUCTION MANAGEMENT	4,085,421	6.68	10	40	0.67	2.67	2.337%	6.68%	1,429,800	5,515,221
1.3.1	GENERAL CONDITIONS	6,840,414	11.18	10	40	1.12	4.47	3.913%	11.18%	2,393,981	9,234,395
1.3.13	SPECIAL CONSTRUCTION	34,013,797	55.59	10	40	5.56	22.24	19.457%	55.59%	11,904,015	45,917,812
1.5.2	PROCUREMENT FEES	408,542	0.67	10	40	0.07	0.27	0.234%	0.67%	142,980	551,522
	ESCALATION	0	0.00	10	40	0.00	0.00	0.000%	0.00%	(1)	(1)
SUBTOTAL		61,186,270	100.00					35.000%			
CALCULATED CONTINGENCY		21,415,195									
RESULTANT TEC		82,601,465									
ROUNDED TEC		82,600,000									
PROJECT CONTINGENCY		21,413,730						35.00%			
MANAGEMENT RESERVE		4,126,275									
CONTINGENCY		17,287,455									
TOTAL ESTIMATED COST		82,600,000								21,413,730	82,600,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
 Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
CLOSURE TO RCRA LANDFILL STANDARDS; CLASS C FILL; UNESCALATED

CLEAN BINS W/ ROBOTS FLOOR

PROCUREMENT FEE:

CONSTRUCTION =	\$40,854,211		
GFE =			
	Subtotal	\$40,854,211	
FEE @ 1% =	\$40,854,211	• 0.01 =	\$408,542

G&A @ 23% (with a ceiling of \$500,000 imposed per year , 10 Years)

CONSTRUCTION OR			
CEILING * # OF YEARS =	\$5,000,000		
GFE =		\$0	
PROCUREMENT FEE =		\$408,542	
	Subtotal	\$5,408,542	
FEE @ 23% =	\$5,408,542	• 0.23 =	\$1,243,965

PIF @ 5.5%

CONSTRUCTION =	\$40,854,211		
GFE =		\$0	
PROCUREMENT FEE =		\$408,542	
G&A =		\$1,243,965	
	Subtotal	\$42,506,718	
FEE @ 5.5% =	\$42,506,718	• 0.055 =	\$2,337,869

TOTAL PROCUREMENT FEE:	\$408,542
TOTAL G&A FEE:	\$1,243,965
TOTAL PIF:	\$2,337,869

Lockheed Martin Idaho Technologies Co.
COST ESTIMATE SUMMARY

Rev. 6-86

PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
Place NRC Class C Grout**
 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-B**
 PREPARED BY: **S. L. Coward**
 REPORT NAME: **Cost Estimate Summary**

DATE: **27-Jan-1998**
 TIME: **20:26:45**
 CHECKED BY: **SLB**
 APPR'D BY:

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$3,939,045
1.1.1	DESIGN ENGINEERING TITLE I & II	3,282,538	0	3,282,538
1.1.2	TITLE III INSPECTION	656,507	0	656,507
1.2	<u>MANAGEMENT COSTS</u>			>> \$4,225,021
1.2.1	PROJECT MANAGEMENT	2,923,531	0	2,923,531
1.2.2	CONSTRUCTION MANAGEMENT	1,301,490	0	1,301,490
1.3	<u>CONSTRUCTION</u>			>> \$13,130,159
1.3.1	GENERAL CONDITIONS	3,437,150	0	3,437,150
1.3.2	SITWORK	0	0	0
1.3.3	CONCRETE	3,876,603	0	3,876,603
1.3.15	MECHANICAL	3,365,584	0	3,365,584
1.3.16	ELECTRICAL	2,450,822	0	2,450,822
1.5.2	PROCUREMENT FEES	131,302	0	>> \$131,302
	SUBTOTAL INCLUDING ESCALATION	21,425,527	0	>> \$21,425,527
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$1,326,146
	CONTINGENCY			>> \$7,348,327
	TOTAL ESTIMATED COST			>> \$30,100,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 30.00%

CONTINGENCY= 40.49%

Rev 6-98

PROJECT NAME: ICPP Bin Set Closure (EIS Study)

Place NRC Class C Grout

LOCATION 1: ICPP

REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-B

PREPARED BY: S. L. Coward

DATE **27-Jan-1998**

TIME: 20:26:47

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: **Planning**

PROJECT NO.: 2423-B

PREPARED BY: S. L. Coward

PAGE # 2

DATE 27-Jan-1998

TIME: 20:26:47

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

Rev 6-96
 PROJECT NAME: ICPP Bin Set Closure (EIS Study)
 Place NRC Class C Grout
 LOCATION 1: ICPP
 REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
 PROJECT NO.: 2423-B
 PREPARED BY: S. L. Coward

DATE 27-Jan-1998
 TIME: 20:26:47
 REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.3	CONCRETE											
	PROCURE EQUIPMENT FOR PLACEMENT OF GROUT											
	Grout Booster Pump	1	EA	55,000.00	GEN	0.000				55,000		55,000
	Air Compressor and Miscellaneous Cleaning Equipment	1	LS	25,000.00	GEN	0.000				25,000		25,000
	Manipulator Boxes (2 Plus 1 Spare) Procurement	3	EA	350,000.00	GEN	0.000				1,050,000		1,050,000
	Manipulator Boxes Mobilization and Demobilization (2 per tank @ 50 tanks)	100	EA		CONC GEN	80.000	8,000	256,240				256,240
	GROUT DELIVERY PIPE SHIELDING (Includes 10% Waste)	3,367	LF	130.00	CONC GEN	0.200	673	21,569		437,710		459,279
	GROUT DELIVERY PIPE SHIELDING (Removal and Disposal (Incl. 10% Waste)	3,367	LF		CONC GEN	0.800	2,694	86,276				86,276
	POUR CLASS C GROUT AND CLEAN PIPE (Includes 10% Waste)	10,406	CY	0.28	CONC GEN	0.920	9,574	308,640		2,914		309,554
	CLEANING OF PIPING AFTER EACH LIFT	666	LIFTS	30.00	CONC GEN	0.500	333	10,666		19,980		30,646
	6" CAPS FOR PENETRATIONS (Assume 2 per bin)	100	EA	500.00	CONC GEN	24.000	2,400	76,872		50,000		126,872
	CONCRETE S/T						23,674	\$758,263		\$1,640,604		\$2,398,867
1.3.15	MECHANICAL											
	DOUBLE CONTAINED GROUT delivery pipe	3,367	LF	47.00	CONC GEN	1.200	4,040	129,414	10,101	158,249	13,468	311,232

TYPE OF ESTIMATE: Planning

DATE 27-Jan-1998

PROJECT NO.: 2423-B

TIME: 20:26:47

PREPARED BY: **S. L. Coward**

REPORT NAME: **Detail Cost Estimate Sheet**

REQUESTOR: Bryan Spaulding

[illegible]

DETAILED COST ESTIMATE SHEET

Rev 6-96
 PROJECT NAME: ICPP Bin Set Closure (EIS Study)
 Place NRC Class C Grout
 LOCATION 1: ICPP
 REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
 PROJECT NO.: 2423-B
 PREPARED BY: S. L. Coward

DATE 27-Jan-1998
 TIME: 20:26:47
 REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.16	ELECTRICAL											
	ELECTRICAL S/T						8,700	\$278,661		\$1,260,000		\$1,538,661
	PROJECT SUBTOTAL						126,980	\$4,815,121	\$10,101	\$3,892,313	\$8,343,139	\$17,060,675

Lockheed Martin Idaho Technologies Co.

Rev 6-96

CONTINGENCY ANALYSIS

PROJECT NAME: ICPP Bin Set Closure (EIS Stud
 Place NRC Class C Grout
 LOCATION 1: ICPP
 REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
 PROJECT NO: 2423-B
 PREPARED BY: S. L. Coward

DATE: 27-Jan-1998
 TIME: 20:26:41

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	3,282,538	15.32	10	40	1.53	6.13	5.362%	13.08%	1,134,503	4,417,041
1.1.2	TITLE III INSPECTION	656,507	3.06	10	40	0.31	1.23	1.072%	2.62%	226,900	883,407
1.2.1	PROJECT MANAGEMENT	2,923,531	13.65	10	40	1.36	5.46	4.776%	11.65%	1,010,424	3,933,955
1.2.2	CONSTRUCTION MANAGEMENT	1,301,490	6.07	10	40	0.61	2.43	2.126%	5.19%	449,818	1,751,308
1.3.1	GENERAL CONDITIONS	3,437,150	16.04	10	50	1.60	8.02	7.059%	17.22%	1,493,409	4,930,559
1.3.2	SITEWORK	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.3.3	CONCRETE	3,876,603	18.09	10	50	1.81	9.05	7.961%	19.42%	1,684,348	5,560,951
1.3.15	MECHANICAL	3,365,584	15.71	10	50	1.57	7.85	6.912%	16.86%	1,462,315	4,827,899
1.3.16	ELECTRICAL	2,450,822	11.44	10	50	1.14	5.72	5.033%	12.28%	1,064,859	3,515,681
1.5.2	PROCUREMENT FEES	131,302	0.61	10	40	0.06	0.25	0.214%	0.52%	45,380	176,682
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	102,517	102,517
SUBTOTAL		21,425,527	100.00					40.515%			
CALCULATED CONTINGENCY		8,680,649									
RESULTANT TEC		30,106,176									
ROUNDED TEC		30,100,000									
PROJECT CONTINGENCY		8,674,473						40.49%			
MANAGEMENT RESERVE		1,326,146									
CONTINGENCY		7,348,327									
TOTAL ESTIMATED COST		30,100,000								8,674,473	30,100,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
 Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
 TITLE I 10% - 20%
 TITLE II 5% - 15%
 TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
CLOSURE TO RCRA LANDFILL STANDARDS; CLASS C FILL; UNESCALATED
FILL BINS W/ NRC CLASS C GROUT

PROCUREMENT FEE:

CONSTRUCTION =	\$13,130,159	
GFE =		
Subtotal	\$13,130,159	
FEE @ 1% =	\$13,130,159 * 0.01 =	\$131,302

G&A @ 23% (with a ceiling of \$500,000 imposed per year , 7 Years)

CONSTRUCTION OR		
CEILING * # OF YEARS =	\$3,500,000	
GFE =	\$0	
PROCUREMENT FEE =	\$131,302	
Subtotal	\$3,631,302	
FEE @ 23% =	\$3,631,302 * 0.23 =	\$835,199

PIF @ 5.5%

CONSTRUCTION =	\$13,130,159	
GFE =	\$0	
PROCUREMENT FEE =	\$131,302	
G&A =	\$835,199	
Subtotal	\$14,096,660	
FEE @ 5.5% =	\$14,096,660 * 0.055 =	\$775,316

TOTAL PROCUREMENT FEE:	\$131,302
TOTAL G&A FEE:	\$835,199
TOTAL PIF:	\$775,316

COST ESTIMATE SUMMARY

Rev. 6-96

PROJECT NAME: ICPP Bin Set Closure
D&D of Equipment
LOCATION 1: INEEL / ICPP
REQUESTOR: B. C. Spaulding

TYPE OF ESTIMATE: Planning
PROJECT NO: 2423D&D
PREPARED BY: S.L.Coward/smb
REPORT NAME: Cost Estimate Summary

DATE: 27-Jan-1998
TIME: 19:33:11
CHECKED BY: *SMB*
APPROD BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$0
1.1.1	DESIGN ENGINEERING TITLE I & II	0	0	0
1.1.2	TITLE III INSPECTION	0	0	0
1.2	<u>MANAGEMENT COSTS</u>			>> \$800,213
1.2.1	PROJECT MANAGEMENT	800,213	0	800,213
1.2.2	CONSTRUCTION MANAGEMENT	0	0	0
1.3	<u>CONSTRUCTION</u>			>> \$11,709,711
1.3.13	SPECIAL CONSTRUCTION	11,709,711	0	11,709,711
1.5.2	PROCUREMENT FEES	117,097	0	>> \$117,097
	SUBTOTAL INCLUDING ESCALATION	12,627,021	0	>> \$12,627,021
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$0
	CONTINGENCY			>> \$4,372,979
	TOTAL ESTIMATED COST			>> \$17,000,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 0.00%

CONTINGENCY= 34.63%

Rev 6-96

D&D of Equipment

INEEL / ICPP

B. C. Spaulding

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423D&D

PREPARED BY: S.L.Coward/smb

PAGE # 1

DATE **27-Jan-1998**

TIME: 19:30:57

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423D&D

PREPARED BY: S.L.Coward/smb

PAGE # 2

DATE 27-Jan-1998

TIME: 19:30:57

REPORT NAME: Detail Cost Estimate Sheet

[illegible]

Rev 6-96

D&D of Equipment

INEEL / ICPP

B. C. Spaulding

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423D&D

PREPARED BY: S.L.Coward/smb

PAGE # 3

DATE 27-Jan-1988

TIME: 19:30:57

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423D&D

PREPARED BY: S.L.Coward/smb

DATE 27-Jan-1998

TIME: 19:30:57

REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
3.13	SPECIAL CONSTRUCTION											
	Grouting Manifolds - Class C - Allowance - 8 ea @ 300 sf	1	lot			0.000					537,274	537,274
	LDUA's - Allowance - 7 ea @ 150 sf	1	lot			0.000					209,873	209,873
	Pipe Crawler Robots - Allowance - 7 ea @ 150 sf	1	lot			0.000					209,873	209,873
	Tractor Robots - Allowance - 53 ea @ 250 sf	1	lot			0.000					2,648,393	2,648,393
	Misc Robot Wire and Hose Lines - Allowance - 1 ea @ 1000 sf	1	lot			0.000					199,879	199,879
	Waste Disposal - quantities as stated in EDF											
	- Solid Waste	500	cf			0.000					540	540
	- Radioactive Waste	10,000	cf			0.000					3,000,000	3,000,000
	- Mixed Waste	2,200	cf			0.000					275,000	275,000
	SPECIAL CONSTRUCTION S/T						0				\$*,***,***	\$11,709,711
	PROJECT SUBTOTAL						0	\$0	\$0	\$0	\$12,609,924	\$12,609,924

Lockheed Martin Idaho Technologies Co.

CONTINGENCY ANALYSIS

Rev 6-96
PROJECT NAME: ICPP Bin Set Closure
D&D of Equipment
LOCATION 1: INEEL / ICPP
REQUESTOR: B. C. Spaulding

TYPE OF ESTIMATE: Planning
PROJECT NO: 2423D&D
PREPARED BY: S.L.Coward/smb

DATE: 27-Jan-1998
TIME: 19:33:04

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.1.2	TITLE III INSPECTION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.2.1	PROJECT MANAGEMENT	800,213	6.34	10	40	0.63	2.53	2.218%	6.34%	277,129	1,077,342
1.2.2	CONSTRUCTION MANAGEMENT	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.3.13	SPECIAL CONSTRUCTION	11,709,711	92.74	10	40	9.27	37.09	32.457%	92.74%	4,055,297	15,765,008
1.5.2	PROCUREMENT FEES	117,097	0.93	10	40	0.09	0.37	0.325%	0.93%	40,553	157,650
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
SUBTOTAL		12,627,021	100.00					35.000%			
CALCULATED CONTINGENCY		4,419,457									
RESULTANT TEC		17,046,478									
ROUNDED TEC		17,000,000									
PROJECT CONTINGENCY		4,372,979						34.63%			
MANAGEMENT RESERVE		0									
CONTINGENCY		4,372,979									
TOTAL ESTIMATED COST		17,000,000								4,372,979	17,000,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

INEL RAD Contaminated Surplus Facilities Cost Model ==> D&D Cost

CPP Bin Set Closure

Project File #015720

Prepared by Sherry Coward

[illegible]

NOTES:

- 1 - Assume that facility will have low levels of hazardous material, no rad contamination, and no asbestos
 - 2 - Assume 40' across by 45' high x 2' w for rails plus trolley (5' x 5' x 5')
 - 3 - Assume 7 Air handlers (5' x 5' x 8'), 3 Exhaust Fans (4' x 4' x 3'), and 63 HEPA filters (6' x 6' x 2')
 - 4 - Assume 210 LF x 2' wide concrete
 - 5 - Assume platform (5' x 5' x 6) plus saw (100 sf)
 - 6 - Assume 5' x 5' x 6'
 - 7 - Assume 2' x 2' plugs
 - 8 - Assume 2310' x 1' wide
 - 9 - Waste Disposal Quantities were provided by EDF
- Assume the following Waste Disposal Unit Costs:

Industrial Landfill	\$1.08/cf
Low Level Waste Repository	\$125/cf
Rad Waste	\$300/cf

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
CLOSURE TO RCRA LANDFILL STANDARDS; CLASS C FILL; UNESCALATED

D&D OF EQUIPMENT

PROCUREMENT FEE:

CONSTRUCTION =	\$11,709,711		
GFE =			
Subtotal	\$11,709,711		
FEE @ 1% =	\$11,709,711	* 0.01 =	\$117,097

G&A @ 23% (with a ceiling of \$500,000 imposed per year , 1 Year)

CONSTRUCTION OR CEILING * # OF YEARS =	\$500,000		
GFE =	\$0		
PROCUREMENT FEE =	\$117,097		
Subtotal	\$617,097		
FEE @ 23% =	\$617,097	* 0.23 =	\$141,932

PIF @ 5.5%

CONSTRUCTION =	\$11,709,711		
GFE =	\$0		
PROCUREMENT FEE =	\$117,097		
G&A =	\$141,932		
Subtotal	\$11,968,740		
FEE @ 5.5% =	\$11,968,740	* 0.055 =	\$658,281

TOTAL PROCUREMENT FEE:	\$117,097
TOTAL G&A FEE:	\$141,932
TOTAL PIF:	\$658,281

COST ESTIMATE SUMMARY
ESCALATED

ICPP BIN SET CLOSURE CLOSURE TO RCRA LANDFILL STANDARDS; CLASS C FILL Requestor: B. C. Spaulding	Planning Estimate Estimate #2423	1/28/98	
	Prepared by: S. L. Coward	Checked by:	Approved by:
Regulatory Compliance		31,600,000	
Fill Vaults with Clean Grout		23,300,000	
Clean Bins with Robots			
Floor		157,000,000	
Fill Bins with NRC Class C Grout		64,700,000	
D&D of Equipment		50,600,000	
TOTAL		\$327,200,000	
		USE	\$327,000,000

Lockheed Martin Idaho Technologies Co.
COST ESTIMATE SUMMARY

Rev. 6-96

PROJECT NAME: **Permitting/Documentation
Risk Based - NRC Class C**
 LOCATION 1: **INEEL/ICPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **PLANNING**
 PROJECT NO: **2423-BD-E**
 PREPARED BY: **S. L. Coward**
 REPORT NAME: **Cost Estimate Summary**

DATE: **28-Jan-1998**
 TIME: **11:02:58**
 CHECKED BY: *Smb*
 APPRD BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>CONCEPTUAL</u>			>> \$0
1.1.1	CONCEPTUAL DESIGN	0	0	0
1.2	<u>MANAGEMENT</u>			>> \$3,800,720
1.2.1	PM FOR PROJECT DEVELOPMENT	1,942,993	1,107,506	3,050,499
1.2.2	PROJECT EXECUTION	477,848	272,373	750,221
1.3	<u>PERMITTING</u>			>> \$19,444,616
1.3.1	PERMITTING	12,385,106	7,059,510	19,444,616
1.5.2	PROCUREMENT FEES	123,851	70,595	>> \$194,446
SUBTOTAL INCLUDING ESCALATION		14,929,798	8,509,984	>> \$23,439,782
PROJECT CONTINGENCY				
MANAGEMENT RESERVE				>> \$1,963,906
CONTINGENCY				>> \$6,196,312
TOTAL ESTIMATED COST				>> \$31,600,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 0.00%

CONTINGENCY= 34.81%

DATE: 28-Jan-1998
TIME: 11:03:00
REPORT NAME: Detail Cost Estimate Sheet

[illegible]

Rev 6-96
PROJECT NAME: Permitting/Documentation
Risk Based - NRC Class C
LOCATION 1: INEEL/ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: PLANNING
PROJECT NO.: 2423-BD-E
PREPARED BY: S. L. Coward

DATE 28-Jan-1998
TIME: 11:03:00
REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.1	PERMITTING											
	RCRC Closure (Incl. Writing, Reviews, Public Comments & Issuance of Permits)	2	FTE		Z-1700 LMITCO	1440.00	2,880	186,221				186,221
	Air Monitoring Activities, Fees, etc.	2	LS		LMITCO	0.000					1,208,900	1,208,900
	P.E. Activities	1	LS		LMITCO	0.000					60,000	60,000
	CAA Permit to Construct (Incl. Preparing, Reviews, Public comments & Issuance)	1	LS		Z-1700 LMITCO	1800.00	1,800	116,388				116,388
	CERCLA Coordinator	2	FTE		Z-1700 LMITCO	1500.00	3,000	193,980				193,980
	Regulatory Affairs Oversight	10	YR		Z-1700 LMITCO	150.000	1,500	96,990				96,990
	Other Regulatory Compliance (CWA, Storm Water, Historical, etc.)	1	LS		Z-1700 LMITCO	1000.00	1,000	64,660				64,660
	Survey Plat	1	LS		LMITCO	0.000					10,000	10,000
	SARR	1	LS		Z-3170 LMITCO	4500.00	4,500	312,255				312,255
	NRC Landfill Disposal Requirements	10	LS		Z-1710 LMITCO	9000.00	90,000	4,960,800				4,960,800
	Environmental & Hazards Analysis	2	FTE		Z-1710 LMITCO	1800.00	3,600	198,432				198,432
	Seismic Test Bores (Allowance)	20	HOLES		Z-1710 LMITCO	2700.00	54,000	2,976,480				2,976,480
	Operational Readiness Review	1	LS		LMITCO	0.000					2,000,000	2,000,000
	PERMITTING S/T						162,280	\$9,106,206			\$3,278,900	\$12,385,106
	PROJECT SUBTOTAL						162,280	\$9,106,206	\$0	\$0	\$5,699,741	\$14,805,947

Lockheed Martin Idaho Technologies Co.

Rev 6-96

PROJECT NAME: **Permitting/Documentation
Risk Based - NRC Class C**
 LOCATION 1: **INEEL/ICPP**
 REQUESTOR: **Bryan Spaulding**

CONTINGENCY ANALYSIS

TYPE OF ESTIMATE: **PLANNING**
 PROJECT NO: **2423-BD-E**
 PREPARED BY: **S. L. Coward**

DATE: **28-Jan-1998**
 TIME: **11:02:47**

 REPORT NAME: **Contingency Analysis**

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	CONCEPTUAL DESIGN	0	0.00	10	40	0.00	0.00	0.000%	0.00%	0	0
1.2.1	PM FOR PROJECT DEVELOPMENT	1,942,993	8.29	10	40	0.83	3.32	2.901%	8.29%	676,425	2,619,418
1.2.2	PROJECT EXECUTION	477,848	2.04	10	40	0.20	0.82	0.714%	2.04%	166,356	644,204
1.3.1	PERMITTING	12,385,106	52.84	10	40	5.28	21.14	18.493%	52.84%	4,311,694	16,696,800
1.5.2	PROCUREMENT FEES	123,851	0.53	10	40	0.05	0.21	0.185%	0.53%	43,117	166,968
	ESCALATION	8,509,984	36.31	10	40	3.63	14.52	12.707%	36.31%	2,962,626	11,472,610
SUBTOTAL		23,439,782	100.00					35.000%			
CALCULATED CONTINGENCY		8,203,924									
RESULTANT TEC		31,643,706									
ROUNDED TEC		31,600,000									
PROJECT CONTINGENCY		8,160,218						34.81%			
MANAGEMENT RESERVE		1,963,906									
CONTINGENCY		6,196,312									
TOTAL ESTIMATED COST		31,600,000								8,160,218	31,600,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
 Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
CLOSURE TO RCRA LANDFILL STANDARDS; CLASS C FILL; ESCALATED
REGULATORY COMPLIANCE

PROCUREMENT FEE:

CONSTRUCTION =	\$19,444,616	
GFE =		
Subtotal	\$19,444,616	
FEE @ 1% =	\$19,444,616 * 0.01 =	\$194,446

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 5 yrs)

CONSTRUCTION OR CEILING * 5 YEARS =	\$2,500,000	
GFE =	\$0	
PROCUREMENT FEE =	\$194,446	
Subtotal	\$2,694,446	
FEE @ 23% =	\$2,694,446 * 0.23 =	\$619,723

PIF @ 5.5%

CONSTRUCTION =	\$12,385,106	
GFE =	\$0	
PROCUREMENT FEE =	\$194,446	
G&A =	\$619,723	
Subtotal	\$13,199,275	
FEE @ 5.5% =	\$13,199,275 * 0.055 =	\$725,960

TOTAL PROCUREMENT FEE:	\$194,446
TOTAL G&A FEE:	\$619,723
TOTAL PIF:	\$725,960

Lockheed Martin Idaho Technologies Co.
COST ESTIMATE SUMMARY

Rev. 6-96
 PROJECT NAME: ICPP Bin Set Closure (EIS Stud
 Place Clean Grout in Vault
 LOCATION 1: ICPP
 REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
 PROJECT NO: 2423-A2-E1
 PREPARED BY: S. L. Coward
 REPORT NAME: Cost Estimate Summary

DATE: 28-Jan-1998
 TIME: 10:21:14
 CHECKED BY: *SMB*
 APPRD BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$2,493,296
1.1.1	DESIGN ENGINEERING	1,324,812	649,158	1,973,970
1.1.2	TITLE III INSPECTION	264,962	254,364	519,326
1.2	<u>MANAGEMENT COSTS</u>			>> \$4,288,659
1.2.1	PROJECT MANAGEMENT	1,701,574	1,548,432	3,250,006
1.2.2	CONSTRUCTION MANAGEMENT	529,925	508,728	1,038,653
1.3	<u>CONSTRUCTION</u>			>> \$10,386,530
1.3.1	GENERAL CONDITIONS	1,067,791	1,025,079	2,092,870
1.3.2	SITWORK	0	0	0
1.3.3	CONCRETE	4,231,459	4,062,201	8,293,660
1.5.2	PROCUREMENT FEES	52,992	50,873	>> \$103,865
	SUBTOTAL INCLUDING ESCALATION	9,173,515	8,098,835	>> \$17,272,350
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$1,049,039
	CONTINGENCY			>> \$4,978,611
	TOTAL ESTIMATED COST			>> \$23,300,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 24.00%

CONTINGENCY= 34.90%

TYPE OF ESTIMATE: **Planning**
PROJECT NO.: **2423-A2-E1**
PREPARED BY: **S. L. Coward**

[illegible]

[illegible]

Rev 6-98

Place Clean Grout in Vault

REQUESTOR: **Bryan**

TYPE OF ESTIMATE: Planning

PREPARED BY: **S. L. Cowar**

DATE 28-Jan-1998

RT NAME: Detail Co[illegible]

Rev 6-96
PROJECT NAME: ICPP Bin Set Closure (EIS Study)
Place Clean Grout In Vault
LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning
PROJECT NO.: 2423-A2-E1
PREPARED BY: S. L. Coward

DATE 28-Jan-1998
TIME: 10:21:16
REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.3.1 MEMO:	VAULT GROUTING Assume 4 tubes x 7 vaults plus 10% waste											
	GROUT PLACEMENT & CLEANUP (Includes 10% Waste)	22,946	CY	80.00	CONC GEN	0.350	8,031	257,236		1,835,680		2,092,916
	VAULT GROUTING S/T						9,093	\$291,236		\$1,843,480		\$2,134,716
1.3.3.2	BIN SET VAULT ACCESS HOLES CORE DRILL 18" HOLE THROUGH VAULT ROOF (4 PLACES/VAULT)	28	EA	1,000.00	CONC GEN	100.000	2,800	89,684		28,000		117,684
	SHIELDING AROUND VAULT HOLES	28	EA	5,000.00	CONC GEN	24.000	672	21,524		140,000		161,524
	CAP 18" DIAMETER HOLES	28	EA	1,800.00	CONC GEN	40.000	1,120	35,874		50,400		86,274
	BIN SET VAULT ACCESS HOLES S/T						4,592	\$147,082		\$218,400		\$365,482
	PROJECT SUBTOTAL						36,012	\$1,377,853	\$80,000	\$2,097,960	\$3,821,273	\$7,377,086

Rev 6-95
 PROJECT NAME: ICPP Bin Set Closure (EIS Stud
 Place Clean Grout in Vault
 LOCATION 1: ICPP
 REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
 PROJECT NO: 2423-A2-E1
 PREPARED BY: S. L. Coward

DATE: 28-Jan-1998
 TIME: 10:20:01

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
.1.1	DESIGN ENGINEERING	1,324,812	7.67	10	40	0.77	3.07	2.685%	7.67%	462,329	1,787,141
1.1.2	TITLE III INSPECTION	264,962	1.53	10	40	0.15	0.61	0.537%	1.53%	92,466	357,428
1.2.1	PROJECT MANAGEMENT	1,701,574	9.85	10	40	0.99	3.94	3.448%	9.85%	593,810	2,295,384
.2.2	CONSTRUCTION MANAGEMENT	529,925	3.07	10	40	0.31	1.23	1.074%	3.07%	184,932	714,857
.3.1	GENERAL CONDITIONS	1,067,791	6.18	10	40	0.62	2.47	2.164%	6.18%	372,634	1,440,425
1.3.2	SITWORK	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.3.3	CONCRETE	4,231,459	24.50	10	40	2.45	9.80	8.574%	24.50%	1,476,681	5,708,140
1.5.2	PROCUREMENT FEES	52,992	0.31	10	40	0.03	0.12	0.107%	0.31%	18,493	71,485
	ESCALATION	8,098,835	46.89	10	40	4.69	18.76	16.411%	46.89%	2,826,305	10,925,140
SUBTOTAL		17,272,350	100.00					35.000%			
CALCULATED CONTINGENCY		6,045,323									
RESULTANT TEC		23,317,673									
ROUNDED TEC		23,300,000									
PROJECT CONTINGENCY		6,027,650						34.90%			
MANAGEMENT RESERVE		1,049,039									
CONTINGENCY		4,978,611									
TOTAL ESTIMATED COST		23,300,000								6,027,650	23,300,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
 Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
 TITLE I 10% - 20%
 TITLE II 5% - 15%
 TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
CLOSURE TO RCRA LANDFILL STANDARDS; CLASS C FILL; ESCALATED
FILL VAULTS W/ CLEAN GROUT

PROCUREMENT FEE:

CONSTRUCTION =	\$10,386,530		
GFE =			
Subtotal	\$10,386,530		
FEE @ 1% =	\$10,386,530	* 0.01 =	\$103,865

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 7 yrs)

CONSTRUCTION OR			
CEILING * 7 YEARS =	\$3,500,000		
GFE =	\$0		
PROCUREMENT FEE =	\$103,865		
Subtotal	\$3,603,865		
FEE @ 23% =	\$3,603,865	* 0.23 =	\$828,889

PIF @ 5.5%

CONSTRUCTION =	\$5,299,250		
GFE =	\$0		
PROCUREMENT FEE =	\$103,865		
G&A =	\$828,889		
Subtotal	\$6,232,004		
FEE @ 5.5% =	\$6,232,004	* 0.055 =	\$342,760

TOTAL PROCUREMENT FEE:	\$103,865
TOTAL G&A FEE:	\$828,889
TOTAL PIF:	\$342,760

Lockheed Martin Idaho Technologies Co.

Rev. 6-96

 PROJECT NAME: ICPP Bin Set Closure (EIS Stud
 Tractor (RCRA Estimates)
 LOCATION 1: ICPP
 REQUESTOR: Bryan Spaulding

COST ESTIMATE SUMMARY
 TYPE OF ESTIMATE: Planning
 PROJECT NO: 2423-C-E1
 PREPARED BY: S. L. Coward
 REPORT NAME: Cost Estimate Summary

 DATE: 28-Jan-1998
 TIME: 09:54:26
 CHECKED BY: *SMCB*
 APPROD BY:

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$12,889,502
1.1.1	DESIGN ENGINEERING TITLE I & II	6,128,131	2,757,659	8,885,790
1.1.2	TITLE III INSPECTION	2,042,710	1,961,002	4,003,712
1.2	<u>MANAGEMENT COSTS</u>			>> \$22,485,654
1.2.1	PROJECT MANAGEMENT	7,783,994	6,694,235	14,478,229
1.2.2	CONSTRUCTION MANAGEMENT	4,085,421	3,922,004	8,007,425
1.3	<u>CONSTRUCTION</u>			>> \$80,074,253
1.3.1	GENERAL CONDITIONS	6,840,414	6,566,797	13,407,211
1.3.13	SPECIAL CONSTRUCTION	34,013,797	32,653,245	66,667,042
1.5.2	PROCUREMENT FEES	408,542	392,200	>> \$800,742
	SUBTOTAL INCLUDING ESCALATION	61,303,009	54,947,142	>> \$116,250,151
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$8,087,499
	CONTINGENCY			>> \$32,662,350
	TOTAL ESTIMATED COST			>> \$157,000,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 16.00%

CONTINGENCY= 35.05%

Rev 6-96

PROJECT NAME: ICPP Bin Set Closure (EIS Study)

Tractor (RCRA Estimates)

LOCATION 1: ICPP

REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-C-E1

PREPARED BY: S. L. Coward

DATE 28-Jan-1998

TIME: 10:09:30

REPORT NAME: Detail Cost Estimate Sheet

[illegible]

DETAILED COST ESTIMATE SHEET

PAGE # 2

TYPE OF ESTIMATE: **Planning**
PROJECT NO.: **2423-C-E1**
PREPARED BY: **S. L. Coward**

DATE: 28-Jan-1998
TIME: 10:09:30
REPORT NAME: Detail Cost Estimate Sheet

[illegible]

DETAILED COST ESTIMATE SHEET

Rev 6-96

PROJECT NAME: ICPP Bin Set Closure (EIS Study)

TYPE OF ESTIMATE: Planning

DATE 28-Jan-1998

Tractor (RCRA Estimates)

PROJECT NO.: 2423-C-E1

TIME: 10:09:30

LOCATION 1: ICPP

PREPARED BY: S. L. Coward

REPORT NAME: Detail Cost Estimate Sheet

REQUESTOR: Bryan Spaulding

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
<u>1.3.13</u>	SPECIAL CONSTRUCTION Design of Development of Modifications to Add'l Units	52	EA		GEM	0.000					1,300,000	1,300,000
	INSTALLATION OF CLEANING UNIT:											
	Install Robotic Units	50	EACH		SKWK GEM	160.000	8,000	264,880				264,880
	Install and Shield Unit Hose/Tubes (Mods, Electr., etc.) - Allowance	50	EA	5,000.00	SKWK GEM	160.000	8,000	264,880		250,000		514,880
	Systems Integration	1	LS		GEM	0.000					75,000	75,000
	CAP 18" DIAMETER HOLES	100	EA	1,800.00	SKWK GEM	40.000	4,000	132,440		180,000		312,440
	CAP 6" DIAMETER HOLES	100		500.00	SKWK GEM	24.000	2,400	79,464		50,000		129,464
	OPERATION OF CALCINE RETRIEVAL -	19	FTE		SKWK GEM	11530.0	219,070	7,253,408				7,253,408
	SPECIAL CONSTRUCTION S/T						241,470	\$7,995,072		\$480,000	\$*,***,***	\$25,850,072
	PROJECT SUBTOTAL						<u>306,345</u>	<u>\$10,971,755</u>	<u>\$0</u>	<u>\$480,000</u>	<u>\$40,256,356</u>	<u>\$51,708,111</u>

Lockheed Martin Idaho Technologies Co.

Rev 6-96

CONTINGENCY ANALYSIS

 PROJECT NAME: ICPP Bin Set Closure (EIS Stud
Tractor (RCRA Estimates)

 TYPE OF ESTIMATE: Planning
PROJECT NO: 2423-C-E1
PREPARED BY: S. L. Coward

 DATE: 28-Jan-1998
TIME: 09:54:36

 LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	6,128,131	5.27	10	40	0.53	2.11	1.845%	5.27%	2,148,130	8,276,261
1.1.2	TITLE III INSPECTION	2,042,710	1.76	10	40	0.18	0.70	0.615%	1.76%	716,043	2,758,753
1.2.1	PROJECT MANAGEMENT	7,783,994	6.70	10	40	0.67	2.68	2.344%	6.70%	2,728,569	10,512,563
1.2.2	CONSTRUCTION MANAGEMENT	4,085,421	3.51	10	40	0.35	1.41	1.230%	3.51%	1,432,087	5,517,508
1.3.1	GENERAL CONDITIONS	6,840,414	5.88	10	40	0.59	2.35	2.059%	5.88%	2,397,811	9,238,225
1.3.13	SPECIAL CONSTRUCTION	34,013,797	29.26	10	40	2.93	11.70	10.241%	29.26%	11,923,056	45,936,853
1.5.2	PROCUREMENT FEES	408,542	0.35	10	40	0.04	0.14	0.123%	0.35%	143,209	551,751
	ESCALATION	54,947,142	47.27	10	40	4.73	18.91	16.543%	47.27%	19,260,944	74,208,086
	SUBTOTAL	116,250,151	100.00					35.000%			
	CALCULATED CONTINGENCY	40,687,553									
	RESULTANT TEC	156,937,704									
	ROUNDED TEC	157,000,000									
	PROJECT CONTINGENCY	40,749,849						35.05%			
	MANAGEMENT RESERVE	8,087,499									
	CONTINGENCY	32,662,350									
	TOTAL ESTIMATED COST	157,000,000								40,749,849	157,000,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE
Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE III/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
CLOSURE TO RCRA LANDFILL STANDARDS; CLASS C FILL; ESCALATED

CLEAN BINS W/ ROBOTS - FLOOR

PROCUREMENT FEE:

CONSTRUCTION =	\$80,074,253	
GFE =		
Subtotal	\$80,074,253	
FEE @ 1% =	\$80,074,253 * 0.01 =	\$800,743

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 10 yrs)

CONSTRUCTION OR		
CEILING * 10 YEARS =	\$5,000,000	
GFE =	\$0	
PROCUREMENT FEE =	\$800,743	
Subtotal	\$5,800,743	
FEE @ 23% =	\$5,800,743 * 0.23 =	\$1,334,171

PIF @ 5.5%

CONSTRUCTION =	\$40,854,211	
GFE =	\$0	
PROCUREMENT FEE =	\$800,743	
G&A =	\$1,334,171	
Subtotal	\$42,989,124	
FEE @ 5.5% =	\$42,989,124 * 0.055 =	\$2,364,402

TOTAL PROCUREMENT FEE:	\$800,743
TOTAL G&A FEE:	\$1,334,171
TOTAL PIF:	\$2,364,402

Lockheed Martin Idaho Technologies Co.
COST ESTIMATE SUMMARY

Rev. 6-96

PROJECT NAME: ICPP Bin Set Closure (EIS Stud
 Place NRC Class C Grout
 LOCATION 1: ICPP
 REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
 PROJECT NO: 2423-B-E2
 PREPARED BY: S. L. Coward
 REPORT NAME: Cost Estimate Summary

DATE: 28-Jan-1998
 TIME: 10:46:06
 CHECKED BY: *SMB*
 APPR'D BY:

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$7,746,789
1.1.1	DESIGN ENGINEERING TITLE I & II	3,282,538	2,987,110	6,269,648
1.1.2	TITLE III INSPECTION	656,507	820,634	1,477,141
1.2	<u>MANAGEMENT COSTS</u>			>> \$9,437,874
1.2.1	PROJECT MANAGEMENT	2,972,384	3,537,137	6,509,521
1.2.2	CONSTRUCTION MANAGEMENT	1,301,490	1,626,863	2,928,353
1.3	<u>CONSTRUCTION</u>			>> \$29,542,856
1.3.1	GENERAL CONDITIONS	3,437,150	4,296,437	7,733,587
1.3.2	SITWORK	0	0	0
1.3.3	CONCRETE	3,876,603	4,845,753	8,722,356
1.3.15	MECHANICAL	3,365,584	4,206,980	7,572,564
1.3.16	ELECTRICAL	2,450,822	3,063,527	5,514,349
1.5.2	PROCUREMENT FEES	131,302	164,127	>> \$295,429
	SUBTOTAL INCLUDING ESCALATION	21,474,380	25,548,568	>> \$47,022,948
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$2,983,829
	CONTINGENCY			>> \$14,693,223
	TOTAL ESTIMATED COST			>> \$64,700,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 26.00%

CONTINGENCY= 37.59%

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-B-E2

PREPARED BY: **S. L. Coward**

PAGE # 1

DATE 28-Jan-1998

TIME: 10:46:08

REPORT NAME: Detail Cost Estimate Sheet

[illegible]

TYPE OF ESTIMATE: Planning

DATE 28-Jan-1998

PROJECT NO.: 2423-B-E2

TIME: 10:46:08

PREPARED BY: S. L. Coward

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

PROJECT NAME: ICPP Bin Set Closure (EIS Study)

Place NRC Class C Grout

LOCATION 1: ICPP

REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-B-E2

PREPARED BY: **S. L. Coward**

DATE **28-Jan-1998**

TIME: 10:46:08

REPORT NAME: Detail Cost Estimate Sheet

[illegible]

TYPE OF ESTIMATE: Planning

DATE 28-Jan-1998

PROJECT NO.: **2423-B-E2**

TIME: 10:46:08

PREPARED BY: **S. L. Coward**

REPORT NAME: **Detail Cost Estimate Sheet**

REQUESTOR: Bryan Spaulding

[illegible]

DETAILED COST ESTIMATE SHEET

Rev 6-96
 PROJECT NAME: ICPP Bin Set Closure (EIS Study)
 Place NRC Class C Grout
 LOCATION 1: ICPP
 REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
 PROJECT NO.: 2423-B-E2
 PREPARED BY: S. L. Coward

DATE: 28-Jan-1998
 TIME: 10:46:08
 REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.16	ELECTRICAL											
	ELECTRICAL S/T						8,700	\$278,661		\$1,260,000		\$1,538,661
	PROJECT SUBTOTAL						126,980	\$4,815,121	\$10,101	\$3,892,313	\$8,391,992	\$17,109,528

Lockheed Martin Idaho Technologies Co.

Rev 6-96

PROJECT NAME: ICPP Bin Set Closure (EIS Stud

Place NRC Class C Grout

LOCATION 1: ICPP

REQUESTOR: Bryan Spaulding

CONTINGENCY ANALYSIS

 TYPE OF ESTIMATE: Planning
 PROJECT NO: 2423-B-E2
 PREPARED BY: S. L. Coward

DATE: 28-Jan-1998

TIME: 10:46:03

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	3,282,538	6.98	10	40	0.70	2.79	2.443%	5.96%	1,053,402	4,335,940
1.1.2	TITLE III INSPECTION	656,507	1.40	10	40	0.14	0.56	0.489%	1.19%	210,680	867,187
1.2.1	PROJECT MANAGEMENT	2,972,384	6.32	10	40	0.63	2.53	2.212%	5.40%	953,870	3,926,254
1.2.2	CONSTRUCTION MANAGEMENT	1,301,490	2.77	10	40	0.28	1.11	0.969%	2.36%	417,662	1,719,152
1.3.1	GENERAL CONDITIONS	3,437,150	7.31	10	50	0.73	3.65	3.216%	7.84%	1,386,651	4,823,801
1.3.2	SITWORK	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.3.3	CONCRETE	3,876,603	8.24	10	50	0.82	4.12	3.627%	8.85%	1,563,940	5,440,543
1.3.15	MECHANICAL	3,365,584	7.16	10	50	0.72	3.58	3.149%	7.68%	1,357,779	4,723,363
1.3.16	ELECTRICAL	2,450,822	5.21	10	50	0.52	2.61	2.293%	5.59%	988,737	3,439,559
1.5.2	PROCUREMENT FEES	131,302	0.28	10	40	0.03	0.11	0.098%	0.24%	42,136	173,438
	ESCALATION	25,548,568	54.33	10	40	5.43	21.73	19.016%	46.38%	9,702,195	35,250,763
SUBTOTAL		47,022,948	100.00					37.513%			
CALCULATED CONTINGENCY		17,639,746									
RESULTANT TEC		64,662,694									
ROUNDED TEC		64,700,000									
PROJECT CONTINGENCY		17,677,052						37.59%			
MANAGEMENT RESERVE		2,983,829									
CONTINGENCY		14,693,223									
TOTAL ESTIMATED COST		64,700,000								17,677,052	64,700,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
 Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE III/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
CLOSURE TO RCRA LANDFILL STANDARDS; CLASS C FILL; ESCALATED

FILL BINS W/ NRC CLASS C GROUT

PROCUREMENT FEE:

CONSTRUCTION = \$29,542,856

GFE =

Subtotal \$29,542,856

FEE @ 1% = \$29,542,856 * 0.01 = \$295,429

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 7 yrs)

CONSTRUCTION OR

CEILING * 7 YEARS = \$3,500,000

GFE = \$0

PROCUREMENT FEE = \$295,429

Subtotal \$3,795,429

FEE @ 23% = \$3,795,429 * 0.23 = \$872,949

PIF @ 5.5%

CONSTRUCTION = \$13,130,159

GFE = \$0

PROCUREMENT FEE = \$295,429

G&A = \$872,949

Subtotal \$14,298,536

FEE @ 5.5% = \$14,298,536 * 0.055 = \$786,419

TOTAL PROCUREMENT FEE: \$295,429

TOTAL G&A FEE: \$872,949

TOTAL PIF: \$786,419

Lockheed Martin Idaho Technologies Co.
COST ESTIMATE SUMMARY

Rev. 6-96
 PROJECT NAME: ICPP Bin Set Closure
 D&D of Equipment
 LOCATION 1: INEEL / ICPP
 REQUESTOR: B. C. Spaulding

TYPE OF ESTIMATE: Planning
 PROJECT NO: 2423D&D
 PREPARED BY: S.L.Coward/smb
 REPORT NAME: Cost Estimate Summary

DATE: 28-Jan-1998
 TIME: 09:58:46
 CHECKED BY: *JMB*
 APPRD BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
<u>1.1</u>	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$0
1.1.1	DESIGN ENGINEERING TITLE I & II	0	0	0
1.1.2	TITLE III INSPECTION	0	0	0
<u>1.2</u>	<u>MANAGEMENT COSTS</u>			>> \$2,561,125
1.2.1	PROJECT MANAGEMENT	868,178	1,692,947	2,561,125
1.2.2	CONSTRUCTION MANAGEMENT	0	0	0
<u>1.3</u>	<u>CONSTRUCTION</u>			>> \$34,543,647
1.3.13	SPECIAL CONSTRUCTION	11,709,711	22,833,936	34,543,647
1.5.2	PROCUREMENT FEES	117,097	228,339	>> \$345,436
	SUBTOTAL INCLUDING ESCALATION	12,694,986	24,755,222	>> \$37,450,208
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$0
	CONTINGENCY			>> \$13,149,792
	TOTAL ESTIMATED COST			>> \$50,600,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 0.00%

CONTINGENCY= 35.11%

Rev 6-96

D&D of Equipment

B. C. Spaulding

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423D&D

PREPARED BY: S.L.Coward/smb

DATE 28-Jan-1998

TIME: 10:13:24

REPORT NAME: Detail Cost Estimate Sheet

[illegible]

Rev 6-96

D&D of Equipment

INEEL / ICPP

B. C. Spaulding

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423D&D

PREPARED BY: S.L.Coward/smb

DATE 28-Jan-1998

TIME: 10:13:24

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423D&D

PREPARED BY: S.L.Coward/smb

PAGE # 4

DATE 28-Jan-1998

TIME: 10:13:24

REPORT NAME: Detail Cost Estimate Sheet

DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
SPECIAL CONSTRUCTION											
Grouting Manifolds - Class C - Allowance - 8 ea @ 300 sf	1	lot			0.000					537,274	537,274
LDUA's - Allowance - 7 ea @ 150 sf	1	lot			0.000					209,873	209,873
Pipe Crawler Robots - Allowance - 7 ea @ 150 sf	1	lot			0.000					209,873	209,873
Tractor Robots - Allowance - 53 ea @ 250 sf	1	lot			0.000					2,648,393	2,648,393
Misc Robot Wire and Hose Lines - Allowance - 1 ea @ 1000 sf	1	lot			0.000					199,879	199,879
Waste Disposal - quantities as stated in EDF											
- Solid Waste	500	cf			0.000					540	540
- Radioactive Waste	10,000	cf			0.000					3,000,000	3,000,000
- Mixed Waste	2,200	cf			0.000					275,000	275,000
SPECIAL CONSTRUCTION S/T						0				\$*, ***, ***	\$11,709,711
PROJECT SUBTOTAL						0	\$0	\$0	\$0	\$12,577,889	\$12,577,889

Lockheed Martin Idaho Technologies Co.

Rev 6-96

CONTINGENCY ANALYSIS

PROJECT NAME: **ICPP Bin Set Closure**
D&D of Equipment
 LOCATION 1: **INEEL / ICPP**
 REQUESTOR: **B. C. Spaulding**

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423D&D**
 PREPARED BY: **S.L.Coward/smb**

DATE: **28-Jan-1998**
 TIME: **09:58:43**

 REPORT NAME: **Contingency Analysis**

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.1.2	TITLE III INSPECTION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.2.1	PROJECT MANAGEMENT	868,178	2.32	10	40	0.23	0.93	0.811%	2.32%	304,841	1,173,019
1.2.2	CONSTRUCTION MANAGEMENT	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.3.13	SPECIAL CONSTRUCTION	11,709,711	31.27	10	40	3.13	12.51	10.944%	31.27%	4,111,600	15,821,311
1.5.2	PROCUREMENT FEES	117,097	0.31	10	40	0.03	0.13	0.109%	0.31%	41,116	158,213
	ESCALATION	24,755,222	66.10	10	40	6.61	26.44	23.136%	66.10%	8,692,235	33,447,457
	SUBTOTAL	37,450,208	100.00					35.000%			
	CALCULATED CONTINGENCY	13,107,573									
	RESULTANT TEC	50,557,781									
	ROUNDED TEC	50,600,000									
	PROJECT CONTINGENCY	13,149,792						35.11%			
	MANAGEMENT RESERVE	0									
	CONTINGENCY	13,149,792									
	TOTAL ESTIMATED COST	50,600,000								13,149,792	50,600,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
 Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE III/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
CLOSURE TO RCRA LANDFILL STANDARDS; CLASS C FILL; ESCALATED

D&D OF EQUIPMENT

PROCUREMENT FEE:

CONSTRUCTION =	\$34,543,647	
GFE =		
Subtotal	<u>\$34,543,647</u>	
FEE @ 1% ÷	\$34,543,647 * 0.01 =	\$345,436

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 1 yrs)

CONSTRUCTION OR		
CEILING * 1 YEARS =	\$500,000	
GFE =	\$0	
PROCUREMENT FEE =	<u>\$345,436</u>	
Subtotal	<u>\$845,436</u>	
FEE @ 23% =	\$845,436 * 0.23 =	\$194,450

PIF @ 5.5%

CONSTRUCTION =	\$11,709,711	
GFE =	\$0	
PROCUREMENT FEE =	\$345,436	
G&A =	<u>\$194,450</u>	
Subtotal	<u>\$12,249,598</u>	
FEE @ 5.5% =	\$12,249,598 * 0.055 =	\$673,728

TOTAL PROCUREMENT FEE:	\$345,436
------------------------	-----------

TOTAL G&A FEE:	\$194,450
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TOTAL PIF:	\$673,728
------------	-----------

ID	Task Name	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
33	RETRIEVAL COMPLETE											
34	GROUT VAULTS											
35	CLEAN BIN FLOORS											
36	RCRA CLOSURE											
37	GROUT BINS											
38	BIN SET #4											
39	RETRIEVAL COMPLETE											
40	GROUT VAULTS											
41	CLEAN BIN FLOORS											
42	RCRA CLOSURE											
43	GROUT BINS											
44	BIN SET #2											
45	RETRIEVAL COMPLETE											
46	GROUT VAULTS											
47	CLEAN BIN FLOORS											
48	RCRA CLOSURE											
49	GROUT BINS											

Project: 2423-4.MPP
Date: Tue 1/6/98

Task

Milestone

Rolled Up Task

Progress

Summary

Rolled Up Milestone

[illegible]

 Rolled Up Progress

COST ESTIMATE SUMMARY
UNESCALATED

ICPP BIN SET CLOSURE CLOSURE TO RCRA LANDFILL STANDARDS; CLEAN FILL Requestor: B. C. Spaulding	Planning Estimate Estimate #2423 Prepared by: S. L. Coward	<div style="text-align: right;">1/28/98</div> <div> Checked by: Approved by: </div>
Regulatory Compliance	6,300,000	
Fill Vaults with Clean Grout	12,400,000	
Clean Bins with Robots Floor	82,600,000	
Fill Bins with Clean Grout	14,000,000	
D&D of Equipment	17,000,000	
TOTAL	\$132,300,000	
	USE	\$132,000,000

RCRA CLOSURE TO LANDFILL STANDARDS -- "CLEAN" GROUT

DESCRIPTION	BIN SET #1	BIN SET #5	BIN SET #6	BIN SET #2	BIN SET #7	BIN SET #4	BIN SET #3
Scheduled Retrieval Completion	(1/1/14)	(3/1/18)	(8/1/22)	(2/1/27)	(2/1/27)	(2/1/29)	(10/1/31)

ASSUME: Wait 1 Year until Start of Closure

Permitting (3 Years) 1/1/12--1/1/15

Grout Vaults "Clean" (Assume 1 Year)

ED&I (2 Yrs)	1/1/13--1/1/15						
Management	1/1/13--10/1/33						
Construction	1/1/15--1/1/16	3/1/19--3/1/20	8/1/23--8/1/24	2/1/28--2/1/29	2/1/28--2/1/29	2/1/30--2/1/31	10/1/32--10/1/33

Clean Bin Floors with Robot	(3 Months)	(15 Months)	(24 Months)	(13 Months)	(25 Months)	(7 Months)	(17 Months)
-----------------------------	------------	-------------	-------------	-------------	-------------	------------	-------------

ED&I (4 Yrs)	1/1/11--1/1/15						
Management	1/1/11--3/1/34						
Construction	1/1/15--4/1/15	3/1/19--6/1/20	8/1/23--8/1/25	2/1/28--3/1/29	2/1/28--3/1/30	2/1/30--9/1/30	10/1/32--3/1/34

RCRA CLOSURE

Grout Bins "Clean"	(3 Months)	(7 Months)	(9 Months)	(6 Months)	(9 Months)	(4 Months)	(7 Months)
ED&I (3 Yrs)	4/1/12--4/1/15						
Management	4/1/12--3/1/35						
Construction	4/1/15--7/1/15	6/1/20--12/1/20	8/1/25--5/1/26	3/1/29--9/1/29	3/1/30--12/1/30	9/1/30--1/1/31	3/1/34--10/1/34

ASSUMPTIONS:

- 1) More than 1 crew could be utilized simultaneously for pouring the "clean" grout into the vaults.
- 2) More than 1 crew could be utilized simultaneously for cleaning the separate bins.
- 3) Installation of "clean" grout into vaults will average 1 year per vault.
- 4) Cleaning of bin floors are based on individual bin pro-rated calcine retrieval volumes to total volume. These schedules assume mob/demob, installation of robotic units, and any modifications of bins will be completed and bins will be ready for retrieval.
- 5) Durations for the "clean" grouting of the bins are based on individual pro-rated grout volumes to the total volume times the schedule.

Rev. 6-96
PROJECT NAME: Permitting/Documentation
Risk Based - Clean
LOCATION 1: INEEL/ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: PLANNING
PROJECT NO: 2423-A1 D
PREPARED BY: S. L. Coward
REPORT NAME: Cost Estimate Summary

DATE: 27-Jan-1998
TIME: 19:00:52
CHECKED BY: *SMB*
APPR'D BY:

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
<u>1.1</u>	<u>CONCEPTUAL</u>			>> \$0
1.1.1	CONCEPTUAL DESIGN	0	0	0
<u>1.2</u>	<u>MANAGEMENT</u>			>> \$917,792
1.2.1	PM FOR PROJECT DEVELOPMENT	768,088	0	768,088
1.2.2	PROJECT EXECUTION	149,704	0	149,704
<u>1.3</u>	<u>PERMITTING</u>			>> \$3,742,601
1.3.1	PERMITTING	3,742,601	0	3,742,601
1.5.2	PROCUREMENT FEES	37,426	0	>> \$37,426
SUBTOTAL INCLUDING ESCALATION		4,697,819	0	>> \$4,697,819
PROJECT CONTINGENCY				
MANAGEMENT RESERVE				>> \$378,003
CONTINGENCY				>> \$1,224,178
TOTAL ESTIMATED COST				>> \$6,300,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 0.00%

CONTINGENCY= 34.10%

PROJECT NAME: Permitting/Documentation
Risk Based - Clean
LOCATION 1: INEEL/ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: **PLANNING**
PROJECT NO.: **2423-A1 D**
PREPARED BY: **S. L. Coward**

DATE: 27-Jan-1998
TIME: 19:01:02
REPORT NAME: Detail Cost Estimate Sheet

[illegible]

PERMITTING S/T

DETAILED COST ESTIMATE SHEET

Rev 6-96
 PROJECT NAME: Permitting/Documentation
 Risk Based - Clean
 LOCATION 1: INEEL/ICPP
 REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: PLANNING
 PROJECT NO.: 2423-A1 D
 PREPARED BY: S. L. Coward

DATE 27-Jan-1998
 TIME: 19:01:02
 REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
	PROJECT SUBTOTAL						13,630	\$902,601	\$0	\$0	\$3,757,792	\$4,660,393

Rev 6-96
PROJECT NAME: Permitting/Documentation
Risk Based - Clean
LOCATION 1: INEEL/ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: PLANNING
PROJECT NO: 2423-A1 D
PREPARED BY: S. L. Coward

DATE: 27-Jan-1998
TIME: 19:00:49

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	CONCEPTUAL DESIGN	0	0.00	10	40	0.00	0.00	0.000%	0.00%	0	0
1.2.1	PM FOR PROJECT DEVELOPMENT	768,088	16.35	10	40	1.63	6.54	5.722%	16.35%	261,955	1,030,043
1.2.2	PROJECT EXECUTION	149,704	3.19	10	40	0.32	1.27	1.115%	3.19%	51,056	200,760
1.3.1	PERMITTING	3,742,601	79.67	10	40	7.97	31.87	27.883%	79.67%	1,276,406	5,019,007
1.5.2	PROCUREMENT FEES	37,426	0.80	10	40	0.08	0.32	0.279%	0.80%	12,764	50,190
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
SUBTOTAL		4,697,819	100.00					35.000%			
CALCULATED CONTINGENCY		1,644,237									
RESULTANT TEC		6,342,056									
ROUNDED TEC		6,300,000									
PROJECT CONTINGENCY		1,602,181						34.10%			
MANAGEMENT RESERVE		378,003									
CONTINGENCY		1,224,178									
TOTAL ESTIMATED COST		6,300,000								1,602,181	6,300,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE
Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
CLOSURE TO RCRA LANDFILL STANDARDS; CLEAN FILL; UNESCALATED

REGULATORY COMPLIANCE

PROCUREMENT FEE:

CONSTRUCTION =	\$3,742,601	
GFE =		
Subtotal	<u>\$3,742,601</u>	
FEE @ 1% =	\$3,742,601 * 0.01 =	\$37,426

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 3 yrs)

CONSTRUCTION OR		
CEILING * 3 YEARS =	\$1,500,000	
GFE =	\$0	
PROCUREMENT FEE =	<u>\$37,426</u>	
Subtotal	<u>\$1,537,426</u>	
FEE @ 23% =	\$1,537,426 * 0.23 =	\$353,608

PIF @ 5.5%

CONSTRUCTION =	\$3,742,601	
GFE =	\$0	
PROCUREMENT FEE =	<u>\$37,426</u>	
G&A =	<u>\$353,608</u>	
Subtotal	<u>\$4,133,635</u>	
FEE @ 5.5% =	\$4,133,635 * 0.055 =	\$227,350

TOTAL PROCUREMENT FEE:	\$37,426
TOTAL G&A FEE:	\$353,608
TOTAL PIF:	\$227,350

Lockheed Martin Idaho Technologies Co.
COST ESTIMATE SUMMARY

Rev. 6-96

PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
Place Clean Grout in Vault**
 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-A2**
 PREPARED BY: **S. L. Coward**
 REPORT NAME: **Cost Estimate Summary**

DATE: **27-Jan-1998**
 TIME: **19:06:11**
 CHECKED BY: *SNB*
 APPRD BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$1,589,774
1.1.1	DESIGN ENGINEERING	1,324,812	0	1,324,812
1.1.2	TITLE III INSPECTION	264,962	0	264,962
1.2	<u>MANAGEMENT COSTS</u>			>> \$2,216,357
1.2.1	PROJECT MANAGEMENT	1,686,432	0	1,686,432
1.2.2	CONSTRUCTION MANAGEMENT	529,925	0	529,925
1.3	<u>CONSTRUCTION</u>			>> \$5,299,250
1.3.1	GENERAL CONDITIONS	1,067,791	0	1,067,791
1.3.2	SITEWORK	0	0	0
1.3.3	CONCRETE	4,231,459	0	4,231,459
1.5.2	PROCUREMENT FEES	52,992	0	>> \$52,992
SUBTOTAL INCLUDING ESCALATION		9,158,373	0	>> \$9,158,373
PROJECT CONTINGENCY				
MANAGEMENT RESERVE				>> \$535,224
CONTINGENCY				>> \$2,706,403
TOTAL ESTIMATED COST				>> \$12,400,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 30.00%

CONTINGENCY= 35.40%

Rev 8-96

PROJECT NAME: ICPP Bin Set Closure (EIS Study)

Place Clean Grout in Vault

LOCATION 1: ICPP

REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-A2

PREPARED BY: **S. L. Coward**

DATE **27-Jan-1998**

TIME: 19:06:13

REPORT NAME: Detail Cost Estimate Sheet

[illegible]

1.2.2 CONSTRUCTION MANAGEMENT
CONSTRUCTION MANAGEMENT

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-A2

PREPARED BY: S. L. Coward

PAGE # 4

DATE 27-Jan-1998

TIME: 19:06:13

REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.3.1 MEMO:	VAULT GROUTING Assume 4 tubes x 7 vaults plus 10% waste											
	GROUT PLACEMENT & CLEANUP (Includes 10% Waste)	22,946	CY	80.00	CONC GEN	0.350	8,031	257,236		1,835,680		2,092,916
	VAULT GROUTING S/T						9,093	\$291,236		\$1,843,480		\$2,134,716
1.3.3.2	BIN SET VAULT ACCESS HOLES CORE DRILL 18" HOLE THROUGH VAULT ROOF (4 PLACES/VAULT)	28	EA	1,000.00	CONC GEN	100.000	2,800	89,684		28,000		117,684
	SHIELDING AROUND VAULT HOLES	28	EA	5,000.00	CONC GEN	24.000	672	21,524		140,000		161,524
	CAP 18" DIAMETER HOLES	28	EA	1,800.00	CONC GEN	40.000	1,120	35,874		50,400		86,274
	BIN SET VAULT ACCESS HOLES S/T						4,592	\$147,082		\$218,400		\$365,482
	PROJECT SUBTOTAL						<u>36,012</u>	<u>\$1,377,853</u>	<u>\$80,000</u>	<u>\$2,097,960</u>	<u>\$3,806,131</u>	<u>\$7,361,944</u>

CONTINGENCY ANALYSIS

PROJECT NAME: ICPP Bin Set Closure (EIS Stud
Place Clean Grout in Vault

TYPE OF ESTIMATE: Planning
PROJECT NO: 2423-A2
PREPARED BY: S. L. Coward

DATE: 27-Jan-1998
TIME: 19:06:07

LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING	1,324,812	14.47	10	40	1.45	5.79	5.063%	14.47%	468,920	1,793,732
1.1.2	TITLE III INSPECTION	264,962	2.89	10	40	0.29	1.16	1.013%	2.89%	93,784	358,746
1.2.1	PROJECT MANAGEMENT	1,686,432	18.41	10	40	1.84	7.37	6.445%	18.41%	596,916	2,283,348
1.2.2	CONSTRUCTION MANAGEMENT	529,925	5.79	10	40	0.58	2.31	2.025%	5.79%	187,568	717,493
1.3.1	GENERAL CONDITIONS	1,067,791	11.66	10	40	1.17	4.66	4.081%	11.66%	377,947	1,445,738
1.3.2	SITWORK	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.3.3	CONCRETE	4,231,459	46.20	10	40	4.62	18.48	16.171%	46.20%	1,497,735	5,729,194
1.5.2	PROCUREMENT FEES	52,992	0.58	10	40	0.06	0.23	0.203%	0.58%	18,757	71,749
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
SUBTOTAL		9,158,373	100.00					35.000%			
CALCULATED CONTINGENCY		3,205,431									
RESULTANT TEC		12,363,804									
ROUNDED TEC		12,400,000									
PROJECT CONTINGENCY		3,241,627						35.40%			
MANAGEMENT RESERVE		535,224									
CONTINGENCY		2,706,403									
TOTAL ESTIMATED COST		12,400,000								3,241,627	12,400,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
CLOSURE TO RCRA LANDFILL STANDARDS; CLEAN FILL; UNESCALATED

FILL VAULTS W/ CLEAN GROUT

PROCUREMENT FEE:

CONSTRUCTION =	\$5,299,250	
GFE =		
Subtotal	\$5,299,250	
FEE @ 1% =	\$5,299,250 * 0.01 =	\$52,993

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 7 yrs)

CONSTRUCTION OR		
CEILING * 7 YEARS =	\$3,500,000	
GFE =	\$0	
PROCUREMENT FEE =	\$52,993	
Subtotal	\$3,552,993	
FEE @ 23% =	\$3,552,993 * 0.23 =	\$817,188

PIF @ 5.5%

CONSTRUCTION =	\$5,299,250	
GFE =	\$0	
PROCUREMENT FEE =	\$52,993	
G&A =	\$817,188	
Subtotal	\$6,169,431	
FEE @ 5.5% =	\$6,169,431 * 0.055 =	\$339,319

TOTAL PROCUREMENT FEE:	\$52,993
TOTAL G&A FEE:	\$817,188
TOTAL PIF:	\$339,319

Lockheed Martin Idaho Technologies Co.
COST ESTIMATE SUMMARY

Rev. 6-95
 PROJECT NAME: **ICPP Bin Set Closure (EIS Stud**
Tractor (RCRA Estimates)
 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-C**
 PREPARED BY: **S. L. Coward**
 REPORT NAME: **Cost Estimate Summary**

DATE: **27-Jan-1998**
 TIME: **19:21:06**
 CHECKED BY: *SMB*
 APPR'D BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$8,170,841
1.1.1	DESIGN ENGINEERING TITLE I & II	6,128,131	0	6,128,131
1.1.2	TITLE III INSPECTION	2,042,710	0	2,042,710
1.2	<u>MANAGEMENT COSTS</u>			>> \$11,752,676
1.2.1	PROJECT MANAGEMENT	7,667,255	0	7,667,255
1.2.2	CONSTRUCTION MANAGEMENT	4,085,421	0	4,085,421
1.3	<u>CONSTRUCTION</u>			>> \$40,854,211
1.3.1	GENERAL CONDITIONS	6,840,414	0	6,840,414
1.3.13	SPECIAL CONSTRUCTION	34,013,797	0	34,013,797
1.5.2	PROCUREMENT FEES	408,542	0	>> \$408,542
	SUBTOTAL INCLUDING ESCALATION	61,186,270	0	>> \$61,186,270
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$4,126,275
	CONTINGENCY			>> \$17,287,455
	TOTAL ESTIMATED COST			>> \$82,600,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 20.00%

CONTINGENCY= 35.00%

Rev 6-96

PROJECT NAME: **ICPP Bin Set Closure (EIS Study)**
Tractor (RCRA Estimates)

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-C

PREPARED BY: S. L. Coward

DATE **27-Jan-1998**

TIME: 19:21:08

REPORT NAME: **Detail Cost Estimate Sheet**

LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

[illegible]

[illegible]

DETAILED COST ESTIMATE SHEET

Rev 6-96
 PROJECT NAME: ICPP Bin Set Closure (EIS Study)
 Tractor (RCRA Estimates)
 LOCATION 1: ICPP
 REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
 PROJECT NO.: 2423-C
 PREPARED BY: S. L. Coward

DATE 27-Jan-1998
 TIME: 19:21:08
 REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.13	SPECIAL CONSTRUCTION Design of Development of Modifications to Add'l Units	52	EA		GEM	0.000					1,300,000	1,300,000
	INSTALLATION OF CLEANING UNIT:											
	Install Robotic Units	50	EACH		SKWK GEM	160.000	8,000	264,880				264,880
	Install and Shield Unit Hose/Tubes (Mods, Electr., etc.) - Allowance	50	EA	5,000.00	SKWK GEM	160.000	8,000	264,880		250,000		514,880
	Systems Integration	1	LS		GEM	0.000					75,000	75,000
	CAP 18" DIAMETER HOLES	100	EA	1,800.00	SKWK GEM	40.000	4,000	132,440		180,000		312,440
	CAP 6" DIAMETER HOLES	100		500.00	SKWK GEM	24.000	2,400	79,464		50,000		129,464
	OPERATION OF CALCINE RETRIEVAL -	19	FTE		SKWK GEM	11530.0	219,070	7,253,408				7,253,408
	SPECIAL CONSTRUCTION S/T						241,470	\$7,995,072		\$480,000	\$*,***,***	\$25,850,072
	PROJECT SUBTOTAL						306,345	\$10,971,755	\$0	\$480,000	\$40,139,617	\$51,591,372

Lockheed Martin Idaho Technologies Co.
CONTINGENCY ANALYSIS

Rev 6-96

 PROJECT NAME: ICPP Bin Set Closure (EIS Stud
Tractor (RCRA Estimates)

 TYPE OF ESTIMATE: Planning
PROJECT NO: 2423-C
PREPARED BY: S. L. Coward

 DATE: 27-Jan-1998
TIME: 19:21:02

 LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	6,128,131	10.02	10	40	1.00	4.01	3.505%	10.02%	2,144,699	8,272,830
1.1.2	TITLE III INSPECTION	2,042,710	3.34	10	40	0.33	1.34	1.168%	3.34%	714,900	2,757,610
1.2.1	PROJECT MANAGEMENT	7,667,255	12.53	10	40	1.25	5.01	4.386%	12.53%	2,683,356	10,350,611
1.2.2	CONSTRUCTION MANAGEMENT	4,085,421	6.68	10	40	0.67	2.67	2.337%	6.68%	1,429,800	5,515,221
1.3.1	GENERAL CONDITIONS	6,840,414	11.18	10	40	1.12	4.47	3.913%	11.18%	2,393,981	9,234,395
1.3.13	SPECIAL CONSTRUCTION	34,013,797	55.59	10	40	5.56	22.24	19.457%	55.59%	11,904,015	45,917,812
1.5.2	PROCUREMENT FEES	408,542	0.67	10	40	0.07	0.27	0.234%	0.67%	142,980	551,522
	ESCALATION	0	0.00	10	40	0.00	0.00	0.000%	0.00%	(1)	(1)
SUBTOTAL		61,186,270	100.00					35.000%			
CALCULATED CONTINGENCY		21,415,195									
RESULTANT TEC		82,601,465									
ROUNDED TEC		82,600,000									
PROJECT CONTINGENCY		21,413,730						35.00%			
MANAGEMENT RESERVE		4,126,275									
CONTINGENCY		17,287,455									
TOTAL ESTIMATED COST		82,600,000								21,413,730	82,600,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
CLOSURE TO RCRA LANDFILL STANDARDS; CLEAN FILL; UNESCALATED

CLEAN BINS W/ ROBOTS FLOOR

PROCUREMENT FEE:

CONSTRUCTION =	\$40,854,211		
GFE =			
Subtotal	\$40,854,211		
FEE @ 1% =	\$40,854,211	* 0.01 =	\$408,542

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 10 yrs)

CONSTRUCTION OR			
CEILING * 10 YEARS =	\$5,000,000		
GFE =	\$0		
PROCUREMENT FEE =	\$408,542		
Subtotal	\$5,408,542		
FEE @ 23% =	\$5,408,542	* 0.23 =	\$1,243,965

PIF @ 5.5%

CONSTRUCTION =	\$40,854,211		
GFE =	\$0		
PROCUREMENT FEE =	\$408,542		
G&A =	\$1,243,965		
Subtotal	\$42,506,718		
FEE @ 5.5% =	\$42,506,718	* 0.055 =	\$2,337,869

TOTAL PROCUREMENT FEE:	\$408,542
TOTAL G&A FEE:	\$1,243,965
TOTAL PIF:	\$2,337,869

Lockheed Martin Idaho Technologies Co.**COST ESTIMATE SUMMARY**

Rev. 6-95

PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
Place Clean Grout in Bins
ICPP
Bryan Spaulding**

TYPE OF ESTIMATE: **Planning**
PROJECT NO: **2423-A1**
PREPARED BY: **S. L. Coward**
REPORT NAME: **Cost Estimate Summary**

DATE: **27-Jan-1998**
TIME: **19:25:54**
CHECKED BY: **SMB**
APPR'D BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$1,976,378
1.1.1	DESIGN ENGINEERING	1,646,982	0	1,646,982
1.1.2	TITLE III INSPECTION	329,396	0	329,396
1.2	<u>MANAGEMENT COSTS</u>			>> \$1,748,061
1.2.1	PROJECT MANAGEMENT	1,089,268	0	1,089,268
1.2.2	CONSTRUCTION MANAGEMENT	658,793	0	658,793
1.3	<u>CONSTRUCTION</u>			>> \$6,587,931
1.3.1	GENERAL CONDITIONS	1,067,791	0	1,067,791
1.3.2	SITWORK	229,119	0	229,119
1.3.3	CONCRETE	5,291,021	0	5,291,021
1.5.2	PROCUREMENT FEES	65,879	0	>> \$65,879
	SUBTOTAL INCLUDING ESCALATION	10,378,249	0	>> \$10,378,249
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$665,381
	CONTINGENCY			>> \$2,956,370
	TOTAL ESTIMATED COST			>> \$14,000,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 30.00%

CONTINGENCY= 34.90%

REQUESTOR: **Bryan Spaulding**

[illegible]

[illegible]

TIME: 19:25:56
REPORT NAME: Detail Cost Estimate Sheet

[illegible]

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-A1

PREPARED BY: S. L. Coward

PAGE # 4

DATE 27-Jan-1998

TIME: 19:25:56

REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.3.1 MEMO:	TANK GROUTING Assume maximum quantity for 1 bin (Bin #6 or 7) and reuse											
	INSTALL AND REMOVE DROP TUBES (50 Bins) (Incl. 10% Waste)	3,650	LF		CONC GEN	0.500	1,825	58,455				58,455
	GROUT PLACEMENT & CLEANUP (Includes 10% Waste)	10,406	CY	80.00	CONC GEN	0.350	3,642	116,656		832,480		949,136
	GROUT OVER TANK MONITOR FEET	168	EA	80.00	CONC GEN	24.000	4,032	129,145		13,440		142,585
	TANK GROUTING S/T						9,499	\$304,256		\$859,560		\$1,163,816
1.3.3.2	TANK LEAK MONITORS AND VENTILATION											
	TANK LEAK MONITORS	168	EA	10,000.00	CONC GEN	32.000	5,376	172,193		1,680,000		1,852,193
	TANK LEAK MONITORS AND VENTILATION S/T						5,376	\$172,193		\$1,680,000		\$1,852,193
	PROJECT SUBTOTAL						44,071	\$1,635,971	\$80,000	\$2,636,620	\$3,724,439	\$8,077,030

Rev 6-96
 PROJECT NAME: **ICPP Bin Set Closure (EIS Stud**
Place Clean Grout in Bins
 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-A1**
 PREPARED BY: **S. L. Coward**

DATE: **27-Jan-1998**
 TIME: **19:25:50**

REPORT NAME: **Contingency Analysis**

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING	1,646,982	15.87	10	40	1.59	6.35	5.554%	15.87%	574,756	2,221,738
1.1.2	TITLE III INSPECTION	329,396	3.17	10	40	0.32	1.27	1.111%	3.17%	114,951	444,347
1.2.1	PROJECT MANAGEMENT	1,089,268	10.50	10	40	1.05	4.20	3.673%	10.50%	380,127	1,469,395
1.2.2	CONSTRUCTION MANAGEMENT	658,793	6.35	10	40	0.63	2.54	2.222%	6.35%	229,902	888,695
1.3.1	GENERAL CONDITIONS	1,067,791	10.29	10	40	1.03	4.12	3.601%	10.29%	372,633	1,440,424
1.3.2	SITWORK	229,119	2.21	10	40	0.22	0.88	0.773%	2.21%	79,957	309,076
1.3.3	CONCRETE	5,291,021	50.98	10	40	5.10	20.39	17.844%	50.98%	1,846,435	7,137,456
1.5.2	PROCUREMENT FEES	65,879	0.63	10	40	0.06	0.25	0.222%	0.63%	22,990	88,869
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
SUBTOTAL		10,378,249	100.00					35.000%			
CALCULATED CONTINGENCY		3,632,387									
RESULTANT TEC		14,010,636									
ROUNDED TEC		14,000,000									
PROJECT CONTINGENCY		3,621,751						34.90%			
MANAGEMENT RESERVE		665,381									
CONTINGENCY		2,956,370									
TOTAL ESTIMATED COST		14,000,000								3,621,751	14,000,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%

Experimental/Special Conditions.....Up to 50%

Conceptual 15% - 25%

Experimental/Special Conditions.....Up to 40%

TITLE I 10% - 20%

TITLE II 5% - 15%

TITLE III/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
CLOSURE TO RCRA LANDFILL STANDARDS; CLEAN FILL; UNESCALATED

FILL BINS W/ NRC CLEAN GROUT

PROCUREMENT FEE:

CONSTRUCTION =	\$6,587,931	
GFE =		
Subtotal	\$6,587,931	
FEE @ 1% =	\$6,587,931 * 0.01 =	\$65,879

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 4 yrs)

CONSTRUCTION OR		
CEILING * 4 OF YEARS =	\$200,000	
GFE =	\$0	
PROCUREMENT FEE =	\$65,879	
Subtotal	\$265,879	
FEE @ 23% =	\$265,879 * 0.23 =	\$61,152

PIF @ 5.5%

CONSTRUCTION =	\$6,587,931	
GFE =	\$0	
PROCUREMENT FEE =	\$65,879	
G&A =	\$61,152	
Subtotal	\$6,714,963	
FEE @ 5.5% =	\$6,714,963 * 0.055 =	\$369,323

TOTAL PROCUREMENT FEE:	\$65,879
TOTAL G&A FEE:	\$61,152
TOTAL PIF:	\$369,323

Lockheed Martin Idaho Technologies Co.
COST ESTIMATE SUMMARY

Rev. 6-96
 PROJECT NAME: **ICPP Bin Set Closure
 D&D of Equipment**
 LOCATION 1: **INEEL / ICPP**
 REQUESTOR: **B. C. Spaulding**

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423D&D**
 PREPARED BY: **S.L.Coward/smb**
 REPORT NAME: **Cost Estimate Summary**

DATE: **27-Jan-1998**
 TIME: **19:33:11**
 CHECKED BY: **Smb**
 APPRD BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$0
1.1.1	DESIGN ENGINEERING TITLE I & II	0	0	0
1.1.2	TITLE III INSPECTION	0	0	0
1.2	<u>MANAGEMENT COSTS</u>			>> \$800,213
1.2.1	PROJECT MANAGEMENT	800,213	0	800,213
1.2.2	CONSTRUCTION MANAGEMENT	0	0	0
1.3	<u>CONSTRUCTION</u>			>> \$11,709,711
1.3.13	SPECIAL CONSTRUCTION	11,709,711	0	11,709,711
1.5.2	PROCUREMENT FEES	117,097	0	>> \$117,097
SUBTOTAL INCLUDING ESCALATION		12,627,021	0	>> \$12,627,021
PROJECT CONTINGENCY				
MANAGEMENT RESERVE				>> \$0
CONTINGENCY				>> \$4,372,979
TOTAL ESTIMATED COST				>> \$17,000,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 0.00%

CONTINGENCY= 34.63%

Rev 6-96
PROJECT NAME: **ICPP Bin Set Closure
D&D of Equipment**
LOCATION 1: **INEEL / ICPP**
REQUESTOR: **B. C. Spaulding**

TYPE OF ESTIMATE: **Planning**
PROJECT NO.: **2423D&D**
PREPARED BY: **S.L.Coward/smb**

DATE: 27-Jan-1998
TIME: 19:30:57
REPORT NAME: Detail Cost Estimate Sheet

[illegible]

D&D of Equipment

PROJECT NO.: 2423D&D

TIME: 19:30:57

B. C. Spaulding

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

PROJECT NAME: **ICPP Bin Set Closure
D&D of Equipment**
LOCATION 1: **INEEL / ICPP**
REQUESTOR: **B. C. Spaulding**

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning
PROJECT NO.: 2423D&D
PREPARED BY: S.L.Coward/smb

PAGE # 3

DATE: 27-Jan-1998
TIME: 19:30:57
REPORT NAME: Detail Cost Estimate Sheet

[illegible]

Rev 6-96
PROJECT NAME: ICPP Bln Set Closure
D&D of Equipment
LOCATION 1: INEEL / ICPP
REQUESTOR: B. C. Spaulding

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning
PROJECT NO.: 2423D&D
PREPARED BY: S.L.Coward/smb

DATE 27-Jan-1998
TIME: 19:30:57
REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.13	SPECIAL CONSTRUCTION Grouting Manifolds - Class C - Allowance - 8 ea @ 300 sf	1	lot			0.000					537,274	537,274
	LDUA's - Allowance - 7 ea @ 150 sf	1	lot			0.000					209,873	209,873
	Pipe Crawler Robots - Allowance - 7 ea @ 150 sf	1	lot			0.000					209,873	209,873
	Tractor Robots - Allowance - 53 ea @ 250 sf	1	lot			0.000					2,648,393	2,648,393
	Misc Robot Wire and Hose Lines - Allowance - 1 ea @ 1000 sf	1	lot			0.000					199,879	199,879
	Waste Disposal - quantities as stated In EDF											
	- Solid Waste	500	cf			0.000					540	540
	- Radioactive Waste	10,000	cf			0.000					3,000,000	3,000,000
	- Mixed Waste	2,200	cf			0.000					275,000	275,000
	SPECIAL CONSTRUCTION S/T						0				\$*,***,***	\$11,709,711
	PROJECT SUBTOTAL						0	\$0	\$0	\$0	\$12,509,924	\$12,509,924

Lockheed Martin Idaho Technologies Co.

Rev 6-96

CONTINGENCY ANALYSIS

PROJECT NAME: ICPP Bin Set Closure

D&D of Equipment

LOCATION 1: INEEL / ICPP

REQUESTOR: B. C. Spaulding

TYPE OF ESTIMATE: Planning

PROJECT NO: 2423D&D

PREPARED BY: S.L.Coward/smb

DATE: 27-Jan-1998

TIME: 19:33:04

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.1.2	TITLE III INSPECTION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.2.1	PROJECT MANAGEMENT	800,213	6.34	10	40	0.63	2.53	2.218%	6.34%	277,129	1,077,342
1.2.2	CONSTRUCTION MANAGEMENT	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.3.13	SPECIAL CONSTRUCTION	11,709,711	92.74	10	40	9.27	37.09	32.457%	92.74%	4,055,297	15,765,008
1.5.2	PROCUREMENT FEES	117,097	0.93	10	40	0.09	0.37	0.325%	0.93%	40,553	157,650
	ESCALATION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
SUBTOTAL		12,627,021	100.00					35.000%			
CALCULATED CONTINGENCY		4,419,457									
RESULTANT TEC		17,046,478									
ROUNDED TEC		17,000,000									
PROJECT CONTINGENCY		4,372,979						34.63%			
MANAGEMENT RESERVE		0									
CONTINGENCY		4,372,979									
TOTAL ESTIMATED COST		17,000,000								4,372,979	17,000,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE
 Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
 Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

INEL RAD Contaminated Surplus Facilities Cost Model ==> D&D Cost

CPP Bin Set Closure

Project File #015720

Prepared by Sherry Coward

[illegible]

NOTES:

- 1 - Assume that facility will have low levels of hazardous material, no rad contamination, and no asbestos
 - 2 - Assume 40' across by 45' high x 2' w for rails plus trolley (5' x 6' x 6')
 - 3 - Assume 7 Air handlers (5' x 5' x 6'), 3 Exhaust Fans (4' x 4' x 3'), and 63 HEPA filters (6' x 6' x 2')
 - 4 - Assume 210 LF x 2' wide concrete
 - 5 - Assume platform (5' x 5' x 6) plus saw (100 sf)
 - 6 - Assume 6' x 6' x 6'
 - 7 - Assume 2' x 2' plugs
 - 8 - Assume 2310' x 1' wide
 - 9 - Waste Disposal Quantities were provided by EDF
- Assume the following Waste Disposal Unit Costs:**

Industrial Landfill	\$1.08/cf
Low Level Waste Repository	\$125/cf
Rad Waste	\$300/cf

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
CLOSURE TO RCRA LANDFILL STANDARDS; CLEAN FILL; UNESCALATED

D&D OF EQUIPMENT

PROCUREMENT FEE:

CONSTRUCTION =	\$11,709,711	
GFE =		
Subtotal	\$11,709,711	
FEE @ 1% =	\$11,709,711 * 0.01 =	\$117,097

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 1 yr)

CONSTRUCTION OR CEILING * 1 YEARS =	\$500,000	
GFE =	\$0	
PROCUREMENT FEE =	\$117,097	
Subtotal	\$617,097	
FEE @ 23% =	\$617,097 * 0.23 =	\$141,932

PIF @ 5.5%

CONSTRUCTION =	\$11,709,711	
GFE =	\$0	
PROCUREMENT FEE =	\$117,097	
G&A =	\$141,932	
Subtotal	\$11,968,740	
FEE @ 5.5% =	\$11,968,740 * 0.055 =	\$658,281

TOTAL PROCUREMENT FEE:	\$117,097
TOTAL G&A FEE:	\$141,932
TOTAL PIF:	\$658,281

COST ESTIMATE SUMMARY
ESCALATED

ICPP BIN SET CLOSURE CLOSURE TO RCRA LANDFILL STANDARDS; CLEAN FILL Requestor: B. C. Spaulding	Planning Estimate Estimate #2423	1/28/98
	Prepared by: S. L. Coward	Checked by: Approved by:
Regulatory Compliance		10,300,000
Fill Vaults with Clean Grout		24,000,000
Clean Bins with Robots		
Floor		157,000,000
Fill Bins with Clean Grout		28,800,000
D&D of Equipment		50,600,000
TOTAL		\$270,700,000
	USE	\$271,000,000

COST ESTIMATE SUMMARY

Rev. 6-96
 PROJECT NAME: **Permitting/Documentation
 Risk Based - Clean
 INEEL/ICPP**
 LOCATION 1:
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **PLANNING**
 PROJECT NO: **2423-A1 D**
 PREPARED BY: **S. L. Coward**
 REPORT NAME: **Cost Estimate Summary**

DATE: **28-Jan-1998**
 TIME: **09:48:36**
 CHECKED BY: *SNB*
 APPRD BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
<u>1.1</u>	<u>CONCEPTUAL</u>			>> \$0
1.1.1	CONCEPTUAL DESIGN	0	0	0
<u>1.2</u>	<u>MANAGEMENT</u>			>> \$1,498,012
1.2.1	PM FOR PROJECT DEVELOPMENT	774,995	480,497	1,255,492
1.2.2	PROJECT EXECUTION	149,704	92,816	242,520
<u>1.3</u>	<u>PERMITTING</u>			>> \$6,063,013
1.3.1	PERMITTING	3,742,601	2,320,412	6,063,013
1.5.2	PROCUREMENT FEES	37,426	23,204	>> \$60,630
	SUBTOTAL INCLUDING ESCALATION	4,704,726	2,916,929	>> \$7,621,655
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$612,364
	CONTINGENCY			>> \$2,065,981
	TOTAL ESTIMATED COST			>> \$10,300,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 0.00%

CONTINGENCY= 35.14%

Risk Based - Clean

LOCATION 1: INEEL/ICPP

REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: PLANNING

PROJECT NO.: 2423-A1 D

PREPARED BY: S. L. Coward

PAGE # 1

DATE **28-Jan-1998**

TIME: 10:07:13

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

DETAILED COST ESTIMATE SHEET

PROJECT NAME: Permitting/Documentation
 Risk Based - Clean
 LOCATION 1: INEEL/ICPP
 REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: PLANNING
 PROJECT NO.: 2423-A1 D
 PREPARED BY: S. L. Coward

DATE 28-Jan-1998
 TIME: 10:07:13
 REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.2.1.2	PROJECT SUPPORT											
	PROJECT SUPPORT S/T						0				\$149,704	\$149,704
1.3.1	PERMITTING											
	Air Monitoring Activities, Fees, etc.	1	LS		LIMITCO	0.000					770,000	770,000
	RCRC Closure (Incl. Writing, Reviews, Public Comments & Issuance of Permits)	2	FTE		Z-1700 LIMITCO	1440.00	2,880	186,221				186,221
	P.E. Activities	1	LS		LIMITCO	0.000					60,000	60,000
	CAA Permit to Construct (Incl. Preparing, Reviews, Public comments & Issuance)	1	LS		Z-1700 LIMITCO	1800.00	1,800	116,388				116,388
	CERCLA Coordinator	2	FTE		Z-1700 LIMITCO	1500.00	3,000	193,980				193,980
	Regulatory Affairs Oversight	3	YR		Z-1700 LIMITCO	150.000	450	29,097				29,097
	Other Regulatory Compliance (CWA, Storm Water, Historical, etc.)	1	LS		Z-1700 LIMITCO	1000.00	1,000	64,660				64,660
	Survey Plat	1	LS		LIMITCO	0.000					10,000	10,000
	SARR	1	LS		Z-3170 LIMITCO	4500.00	4,500	312,255				312,255
	Operational Readiness Review	1	LS		LIMITCO	0.000					2,000,000	2,000,000
	PERMITTING S/T						13,630	\$902,601			\$2,840,000	\$3,742,601
	PROJECT SUBTOTAL						13,630	\$902,601	\$0	\$0	\$3,764,698	\$4,667,300

Rev 6-95
PROJECT NAME: Permitting/Documentation
Risk Based - Clean
LOCATION 1: INEEL/ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: PLANNING
PROJECT NO: 2423-A1 D
PREPARED BY: S. L. Coward

DATE: 28-Jan-1998
TIME: 09:48:12

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	CONCEPTUAL DESIGN	0	0.00	10	40	0.00	0.00	0.000%	0.00%	0	0
1.2.1	PM FOR PROJECT DEVELOPMENT	774,995	10.17	10	40	1.02	4.07	3.559%	10.17%	272,343	1,047,338
1.2.2	PROJECT EXECUTION	149,704	1.96	10	40	0.20	0.79	0.687%	1.96%	52,608	202,312
1.3.1	PERMITTING	3,742,601	49.10	10	40	4.91	19.64	17.187%	49.10%	1,315,197	5,057,798
1.5.2	PROCUREMENT FEES	37,426	0.49	10	40	0.05	0.20	0.172%	0.49%	13,152	50,578
	ESCALATION	2,916,929	38.27	10	40	3.83	15.31	13.395%	38.27%	1,025,045	3,941,974
SUBTOTAL		7,621,655	100.00					35.000%			
CALCULATED CONTINGENCY		2,667,579									
RESULTANT TEC		10,289,234									
ROUNDED TEC		10,300,000									
PROJECT CONTINGENCY		2,678,345						35.14%			
MANAGEMENT RESERVE		612,364									
CONTINGENCY		2,065,981									
TOTAL ESTIMATED COST		10,300,000								2,678,345	10,300,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
CLOSURE TO RCRA LANDFILL STANDARDS; CLEAN FILL; ESCALATED

REGULATORY COMPLIANCE

PROCUREMENT FEE:

CONSTRUCTION =	\$6,063,013	
GFE =		
Subtotal	\$6,063,013	
FEE @ 1% =	\$6,063,013 * 0.01 =	\$60,630

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 3 yrs)

CONSTRUCTION OR		
CEILING * 3 YEARS =	\$1,500,000	
GFE =	\$0	
PROCUREMENT FEE =	\$60,630	
Subtotal	\$1,560,630	
FEE @ 23% =	\$1,560,630 * 0.23 =	\$358,945

PIF @ 5.5%

CONSTRUCTION =	\$3,742,601	
GFE =	\$0	
PROCUREMENT FEE =	\$60,630	
G&A =	\$358,945	
Subtotal	\$4,162,176	
FEE @ 5.5% =	\$4,162,176 * 0.055 =	\$228,920

TOTAL PROCUREMENT FEE:	\$60,630
TOTAL G&A FEE:	\$358,945
TOTAL PIF:	\$228,920

COST ESTIMATE SUMMARY

Rev. 6-96

PROJECT NAME: ICPP Bin Set Closure (EIS Stud
Place Clean Grout in Vault
LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
PROJECT NO: 2423-A2-E2
PREPARED BY: S. L. Coward
REPORT NAME: Cost Estimate Summary

DATE: 28-Jan-1998
TIME: 09:51:45
CHECKED BY: *SMB*
APPR'D BY:

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$2,562,185
1.1.1	DESIGN ENGINEERING	1,324,812	702,150	2,026,962
1.1.2	TITLE III INSPECTION	264,962	270,261	535,223
1.2	<u>MANAGEMENT COSTS</u>			>> \$4,407,388
1.2.1	PROJECT MANAGEMENT	1,702,520	1,634,419	3,336,939
1.2.2	CONSTRUCTION MANAGEMENT	529,925	540,524	1,070,449
1.3	<u>CONSTRUCTION</u>			>> \$10,704,484
1.3.1	GENERAL CONDITIONS	1,067,791	1,089,146	2,156,937
1.3.2	SITEWORK	0	0	0
1.3.3	CONCRETE	4,231,459	4,316,088	8,547,547
1.5.2	PROCUREMENT FEES	52,992	54,052	>> \$107,044
	SUBTOTAL INCLUDING ESCALATION	9,174,461	8,606,640	>> \$17,781,101
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$1,081,153
	CONTINGENCY			>> \$5,137,746
	TOTAL ESTIMATED COST			>> \$24,000,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 24.00%

CONTINGENCY= 34.97%

TYPE OF ESTIMATE: Planning

DATE 28-Jan-1998

PROJECT NO.: 2423-A2-E2

TIME: 10:10:46

PREPARED BY: **S. L. Coward**

REPORT NAME: Detail Cost Estimate Sheet

REQUESTOR: **Bryan Spaulding**

[illegible]

DETAILED COST ESTIMATE SHEET

PAGE # 2

TYPE OF ESTIMATE: **Planning**
PROJECT NO.: **2423-A2-E2**
PREPARED BY: **S. L. Coward**

DATE: 28-Jan-1998
TIME: 10:10:46
REPORT NAME: Detail Cost Estimate Sheet

[illegible]

[illegible]

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-A2-E2

PREPARED BY: S. L. Coward

PAGE # 4

DATE 28-Jan-1998

TIME: 10:10:46

REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
3.1	<u>VAULT GROUTING</u>											
10:	Assume 4 tubes x 7 vaults plus 10% waste											
	GROUT PLACEMENT & CLEANUP (Includes 10% Waste)	22,946	CY	80.00	CONC GEN	0.350	8,031	257,236		1,835,680		2,092,916
	VAULT GROUTING S/T						9,093	\$291,236		\$1,843,480		\$2,134,716
3.2	<u>BIN SET VAULT ACCESS HOLES</u>											
	CORE DRILL 18" HOLE THROUGH VAULT ROOF (4 PLACES/VAULT)	28	EA	1,000.00	CONC GEN	100.000	2,800	89,684		28,000		117,684
	SHIELDING AROUND VAULT HOLES	28	EA	5,000.00	CONC GEN	24.000	672	21,524		140,000		161,524
	CAP 18" DIAMETER HOLES	28	EA	1,800.00	CONC GEN	40.000	1,120	35,874		50,400		86,274
	BIN SET VAULT ACCESS HOLES S/T						4,592	\$147,082		\$218,400		\$365,482
	PROJECT SUBTOTAL						36,012	\$1,377,853	\$80,000	\$2,097,960	\$3,822,219	\$7,378,032

Lockheed Martin Idaho Technologies Co.

Rev 6-96

CONTINGENCY ANALYSIS

PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
Place Clean Grout in Vault**
 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-A2-E2**
 PREPARED BY: **S. L. Coward**

DATE: **28-Jan-1998**
 TIME: **09:51:35**

 REPORT NAME: **Contingency Analysis**

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING	1,324,812	7.45	10	40	0.75	2.98	2.608%	7.45%	463,350	1,788,162
1.1.2	TITLE III INSPECTION	264,962	1.49	10	40	0.15	0.60	0.522%	1.49%	92,670	357,632
1.2.1	PROJECT MANAGEMENT	1,702,520	9.57	10	40	0.96	3.83	3.351%	9.57%	595,452	2,297,972
1.2.2	CONSTRUCTION MANAGEMENT	529,925	2.98	10	40	0.30	1.19	1.043%	2.98%	185,340	715,265
1.3.1	GENERAL CONDITIONS	1,067,791	6.01	10	40	0.60	2.40	2.102%	6.01%	373,457	1,441,248
1.3.2	SITWORK	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.3.3	CONCRETE	4,231,459	23.80	10	40	2.38	9.52	8.329%	23.80%	1,479,943	5,711,402
1.5.2	PROCUREMENT FEES	52,992	0.30	10	40	0.03	0.12	0.104%	0.30%	18,534	71,526
	ESCALATION	8,606,640	48.40	10	40	4.84	19.36	16.941%	48.40%	3,010,153	11,616,793
SUBTOTAL		17,781,101	100.00					35.000%			
CALCULATED CONTINGENCY		6,223,385									
RESULTANT TEC		24,004,486									
ROUNDED TEC		24,000,000									
PROJECT CONTINGENCY		6,218,899						34.97%			
MANAGEMENT RESERVE		1,081,153									
CONTINGENCY		5,137,746									
TOTAL ESTIMATED COST		24,000,000								6,218,899	24,000,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE
 Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
 Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
 TITLE I 10% - 20%
 TITLE II 5% - 15%
 TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
CLOSURE TO RCRA LANDFILL STANDARDS; CLEAN FILL; ESCALATED

FILL VAULTS W/ CLEAN GROUT

PROCUREMENT FEE:

CONSTRUCTION =	\$10,704,484	
GFE =		
Subtotal	\$10,704,484	
FEE @ 1% =	\$10,704,484 * 0.01 =	\$107,045

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 7 yrs)

CONSTRUCTION OR CEILING * 7 YEARS =	\$3,500,000	
GFE =	\$0	
PROCUREMENT FEE =	\$107,045	
Subtotal	\$3,607,045	
FEE @ 23% =	\$3,607,045 * 0.23 =	\$829,620

PIF @ 5.5%

CONSTRUCTION =	\$5,299,250	
GFE =	\$0	
PROCUREMENT FEE =	\$107,045	
G&A =	\$829,620	
Subtotal	\$6,235,915	
FEE @ 5.5% =	\$6,235,915 * 0.055 =	\$342,975

TOTAL PROCUREMENT FEE:	\$107,045
TOTAL G&A FEE:	\$829,620
TOTAL PIF:	\$342,975

COST ESTIMATE SUMMARY

PROJECT NAME: ICPP Bin Set Closure (EIS Stud
Tractor (RCRA Estimates)
LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
PROJECT NO: 2423-C-E1
PREPARED BY: S. L. Coward
REPORT NAME: Cost Estimate Summary

DATE: 28-Jan-1998
TIME: 09:54:26
CHECKED BY: *SMB*
APPR'D BY:

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$12,889,502
1.1.1	DESIGN ENGINEERING TITLE I & II	6,128,131	2,757,659	8,885,790
1.1.2	TITLE III INSPECTION	2,042,710	1,961,002	4,003,712
1.2	<u>MANAGEMENT COSTS</u>			>> \$22,485,654
1.2.1	PROJECT MANAGEMENT	7,783,994	6,694,235	14,478,229
1.2.2	CONSTRUCTION MANAGEMENT	4,085,421	3,922,004	8,007,425
1.3	<u>CONSTRUCTION</u>			>> \$80,074,253
1.3.1	GENERAL CONDITIONS	6,840,414	6,566,797	13,407,211
1.3.13	SPECIAL CONSTRUCTION	34,013,797	32,653,245	66,667,042
1.5.2	PROCUREMENT FEES	408,542	392,200	>> \$800,742
	SUBTOTAL INCLUDING ESCALATION	61,303,009	54,947,142	>> \$116,250,151
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$8,087,499
	CONTINGENCY			>> \$32,662,350
	TOTAL ESTIMATED COST			>> \$157,000,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= 16.00%

CONTINGENCY= 35.05%

Tractor (RCRA Estimates)

LOCATION 1: ICPP

REQUESTOR: **Bryan Spaulding**

PAGE # 1

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-C-E1

PREPARED BY: **S. L. Coward**

DATE 28-Jan-1998

TIME: 10:09:30

REPORT NAME: **Detail Cost Estimate Sheet**

[illegible]

Rev 8-96

Tractor (RCRA Estimates)

ICPP

Bryan Spaulding

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-C-E1

PREPARED BY: S. L. Coward

DATE 28-Jan-1998

TIME: 10:09:30

REPORT NAME: **Detail Cost Estimate Sheet**[illegible]

DETAILED COST ESTIMATE SHEET

TYPE OF ESTIMATE: Planning

PROJECT NO.: 2423-C-E1

PREPARED BY: S. L. Coward

PAGE # 3

DATE 28-Jan-1998

TIME: 10:09:30

REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
<u>3.13</u>	SPECIAL CONSTRUCTION Design of Development of Modifications to Add'l Units	52	EA		GEM	0.000					1,300,000	1,300,000
	INSTALLATION OF CLEANING UNIT:											
	Install Robotic Units	50	EACH		SKWK GEM	160.000	8,000	264,880				264,880
	Install and Shield Unit Hose/Tubes (Mods, Electr., etc.) - Allowance	50	EA	5,000.00	SKWK GEM	160.000	8,000	264,880		250,000		514,880
	Systems Integration	1	LS		GEM	0.000					75,000	75,000
	CAP 18" DIAMETER HOLES	100	EA	1,800.00	SKWK GEM	40.000	4,000	132,440		180,000		312,440
	CAP 6" DIAMETER HOLES	100		500.00	SKWK GEM	24.000	2,400	79,464		50,000		129,464
	OPERATION OF CALCINE RETRIEVAL -	19	FTE		SKWK GEM	11530.0	219,070	7,253,408				7,253,408
	SPECIAL CONSTRUCTION S/T						241,470	\$7,995,072		\$480,000	\$*,***,***	\$25,850,072
	PROJECT SUBTOTAL						<u>308,346</u>	<u>\$10,971,755</u>	\$0	\$480,000	\$40,256,356	\$51,708,111

Lockheed Martin Idaho Technologies Co.

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CONTINGENCY ANALYSIS

PROJECT NAME: ICPP Bin Set Closure (EIS Stud

TYPE OF ESTIMATE: Planning

DATE: 28-Jan-1998

Tractor (RCRA Estimates)

PROJECT NO: 2423-C-E1

TIME: 09:54:36

LOCATION 1: ICPP

PREPARED BY: S. L. Coward

REQUESTOR: Bryan Spaulding

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	6,128,131	5.27	10	40	0.53	2.11	1.845%	5.27%	2,148,130	8,276,261
1.1.2	TITLE III INSPECTION	2,042,710	1.76	10	40	0.18	0.70	0.615%	1.76%	716,043	2,758,753
1.2.1	PROJECT MANAGEMENT	7,783,994	6.70	10	40	0.67	2.68	2.344%	6.70%	2,728,569	10,512,563
1.2.2	CONSTRUCTION MANAGEMENT	4,085,421	3.51	10	40	0.35	1.41	1.230%	3.51%	1,432,087	5,517,508
1.3.1	GENERAL CONDITIONS	6,840,414	5.88	10	40	0.59	2.35	2.059%	5.88%	2,397,811	9,238,225
1.3.13	SPECIAL CONSTRUCTION	34,013,797	29.26	10	40	2.93	11.70	10.241%	29.26%	11,923,056	45,936,853
1.5.2	PROCUREMENT FEES	408,542	0.35	10	40	0.04	0.14	0.123%	0.35%	143,209	551,751
	ESCALATION	54,947,142	47.27	10	40	4.73	18.91	16.543%	47.27%	19,260,944	74,208,086
	SUBTOTAL	116,250,151	100.00					35.000%			
	CALCULATED CONTINGENCY	40,687,553									
	RESULTANT TEC	156,937,704									
	ROUNDED TEC	157,000,000									
	PROJECT CONTINGENCY	40,749,849						35.05%			
	MANAGEMENT RESERVE	8,087,499									
	CONTINGENCY	32,662,350									
	TOTAL ESTIMATED COST	157,000,000								40,749,849	157,000,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
TITLE I 10% - 20%
TITLE II 5% - 15%
TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
CLOSURE TO RCRA LANDFILL STANDARDS; CLEAN FILL; ESCALATED

CLEAN BINS W/ ROBOTS - FLOOR

PROCUREMENT FEE:

CONSTRUCTION =	\$80,074,253	
GFE =		
Subtotal	<u>\$80,074,253</u>	
FEE @ 1% =	\$80,074,253 * 0.01 =	\$800,743

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 10 yrs)

CONSTRUCTION OR		
CEILING * 10 YEARS =	\$5,000,000	
GFE =	\$0	
PROCUREMENT FEE =	<u>\$800,743</u>	
Subtotal	<u>\$5,800,743</u>	
FEE @ 23% =	\$5,800,743 * 0.23 =	\$1,334,171

PIF @ 5.5%

CONSTRUCTION =	\$40,854,211	
GFE =	\$0	
PROCUREMENT FEE =	<u>\$800,743</u>	
G&A =	<u>\$1,334,171</u>	
Subtotal	<u>\$42,989,124</u>	
FEE @ 5.5% =	\$42,989,124 * 0.055 =	\$2,364,402

TOTAL PROCUREMENT FEE:	\$800,743
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TOTAL G&A FEE:	\$1,334,171
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TOTAL PIF:	\$2,364,402
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Lockheed Martin Idaho Technologies Co.

Rev. 6-96

COST ESTIMATE SUMMARY

 PROJECT NAME: **ICPP Bin Set Closure (EIS Stud
Place Clean Grout in Bins**
 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

 TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-a1-e1**
 PREPARED BY: **S. L. Coward**
 REPORT NAME: **Cost Estimate Summary**

 DATE: **28-Jan-1998**
 TIME: **09:57:10**
 CHECKED BY: *SmB*

APPRD BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> \$3,135,853
1.1.1	DESIGN ENGINEERING	1,646,982	807,021	2,454,003
1.1.2	TITLE III INSPECTION	329,396	352,454	681,850
1.2	<u>MANAGEMENT COSTS</u>			>> \$4,395,861
1.2.1	PROJECT MANAGEMENT	1,547,020	1,485,139	3,032,159
1.2.2	CONSTRUCTION MANAGEMENT	658,793	704,909	1,363,702
1.3	<u>CONSTRUCTION</u>			>> \$13,637,017
1.3.1	GENERAL CONDITIONS	1,067,791	1,142,536	2,210,327
1.3.2	SITEWORK	229,119	245,157	474,276
1.3.3	CONCRETE	5,291,021	5,661,393	10,952,414
1.5.2	PROCUREMENT FEES	65,879	70,491	>> \$136,370
	SUBTOTAL INCLUDING ESCALATION	10,836,001	10,469,100	>> \$21,305,101
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$1,377,339
	CONTINGENCY			>> \$6,117,560
	TOTAL ESTIMATED COST			>> \$28,800,000

PROJECT COST PARAMETERS

 EDI AS A % OF CONST. + GFE= **23.00%**

 CONTINGENCY= **35.18%**

TYPE OF ESTIMATE: **Planning**
PROJECT NO.: **2423-a1-e1**
PREPARED BY: **S. L. Coward**

[illegible]

[illegible]

[illegible]

Rev 6-98
PROJECT NAME: ICPP Bin Set Closure (EIS Study)
Place Clean Grout in Bins
LOCATION 1: ICPP
REQUESTOR: Bryan Spaulding

TYPE OF ESTIMATE: Planning
PROJECT NO.: 2423-a1-e1
PREPARED BY: S. L. Coward

DATE 28-Jan-1998
TIME: 10:11:32
REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.3.1 MEMO:	TANK GROUTING Assume maximum quantity for 1 bin (Bin #6 or 7) and reuse											
	INSTALL AND REMOVE DROP TUBES (50 Bins) (Incl. 10% Waste)	3,650	LF		CONC GEN	0.500	1,825	58,455				58,455
	GROUT PLACEMENT & CLEANUP (Includes 10% Waste)	10,406	CY	80.00	CONC GEN	0.350	3,642	116,656		832,480		949,136
	GROUT OVER TANK MONITOR FEET	168	EA	80.00	CONC GEN	24.000	4,032	129,145		13,440		142,585
	TANK GROUTING S/T						9,499	\$304,256		\$859,560		\$1,163,816
1.3.3.2	TANK LEAK MONITORS AND VENTILATION TANK LEAK MONITORS	168	EA	10,000.00	CONC GEN	32.000	5,376	172,193		1,680,000		1,852,193
	TANK LEAK MONITORS AND VENTILATION S/T						5,376	\$172,193		\$1,680,000		\$1,852,193
	PROJECT SUBTOTAL						44,071	\$1,635,971	\$80,000	\$2,636,620	\$4,182,191	\$8,634,782

Lockheed Martin Idaho Technologies Co.

Rev 6-96

CONTINGENCY ANALYSIS

PROJECT NAME: **ICPP Bin Set Closure (EIS Stud**
Place Clean Grout in Bins
 LOCATION 1: **ICPP**
 REQUESTOR: **Bryan Spaulding**

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423-a1-e1**
 PREPARED BY: **S. L. Coward**

DATE: **28-Jan-1998**
 TIME: **09:57:06**

 REPORT NAME: **Contingency Analysis**

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING	1,646,982	7.73	10	40	0.77	3.09	2.706%	7.73%	579,390	2,226,372
1.1.2	TITLE III INSPECTION	329,396	1.55	10	40	0.15	0.62	0.541%	1.55%	115,878	445,274
1.2.1	PROJECT MANAGEMENT	1,547,020	7.26	10	40	0.73	2.90	2.541%	7.26%	544,225	2,091,245
1.2.2	CONSTRUCTION MANAGEMENT	658,793	3.09	10	40	0.31	1.24	1.082%	3.09%	231,756	890,549
1.3.1	GENERAL CONDITIONS	1,067,791	5.01	10	40	0.50	2.00	1.754%	5.01%	375,637	1,443,428
1.3.2	SITEWORK	229,119	1.08	10	40	0.11	0.43	0.376%	1.08%	80,602	309,721
1.3.3	CONCRETE	5,291,021	24.83	10	40	2.48	9.93	8.692%	24.83%	1,861,323	7,152,344
1.5.2	PROCUREMENT FEES	65,879	0.31	10	40	0.03	0.12	0.108%	0.31%	23,176	89,055
	ESCALATION	10,469,100	49.14	10	40	4.91	19.66	17.199%	49.14%	3,682,912	14,152,012
SUBTOTAL		21,305,101	100.00					35.000%			
CALCULATED CONTINGENCY		7,456,785									
RESULTANT TEC		28,761,886									
ROUNDED TEC		28,800,000									
PROJECT CONTINGENCY		7,494,899						35.18%			
MANAGEMENT RESERVE		1,377,339									
CONTINGENCY		6,117,560									
TOTAL ESTIMATED COST		28,800,000								7,494,899	28,800,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE
 Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
 Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
 TITLE I 10% - 20%
 TITLE II 5% - 15%
 TITLE II/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
CLOSURE TO RCRA LANDFILL STANDARDS; CLEAN FILL; ESCALATED

FILL BINS WITH CLEAN GROUT

PROCUREMENT FEE:

CONSTRUCTION =	\$13,637,017	
GFE =		
Subtotal	<u>\$13,637,017</u>	
FEE @ 1% =	\$13,637,017 * 0.01 =	\$136,370

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 4 yrs)

CONSTRUCTION OR		
CEILING * 4 YEARS =	\$2,000,000	
GFE =	\$0	
PROCUREMENT FEE =	<u>\$136,370</u>	
Subtotal	<u>\$2,136,370</u>	
FEE @ 23% =	\$2,136,370 * 0.23 =	\$491,365

PIF @ 5.5%

CONSTRUCTION =	\$6,587,931	
GFE =	\$0	
PROCUREMENT FEE =	\$136,370	
G&A =	<u>\$491,365</u>	
Subtotal	<u>\$7,215,666</u>	
FEE @ 5.5% =	\$7,215,666 * 0.055 =	\$396,862

TOTAL PROCUREMENT FEE:	\$136,370
TOTAL G&A FEE:	\$491,365
TOTAL PIF:	\$396,862

Lockheed Martin Idaho Technologies Co.
COST ESTIMATE SUMMARY

Rev. 6-96
 PROJECT NAME: **ICPP Bin Set Closure**
D&D of Equipment
 LOCATION 1: **INEEL / ICPP**
 REQUESTOR: **B. C. Spaulding**

TYPE OF ESTIMATE: **Planning**
 PROJECT NO: **2423D&D**
 PREPARED BY: **S.L.Coward/smb**
 REPORT NAME: **Cost Estimate Summary**

DATE: **28-Jan-1998**
 TIME: **09:58:46**
 CHECKED BY: **SMB**
 APPR'D BY: _____

WBS Element	Cost Estimate Element	Total Unescalated	Escalation	Total Incl Escalation
1.1	<u>ENGINEERING, DESIGN AND INSPECTION</u>			>> <u>\$0</u>
1.1.1	DESIGN ENGINEERING TITLE I & II	0	0	0
1.1.2	TITLE III INSPECTION	0	0	0
1.2	<u>MANAGEMENT COSTS</u>			>> <u>\$2,561,125</u>
1.2.1	PROJECT MANAGEMENT	868,178	1,692,947	2,561,125
1.2.2	CONSTRUCTION MANAGEMENT	0	0	0
1.3	<u>CONSTRUCTION</u>			>> <u>\$34,543,647</u>
1.3.13	SPECIAL CONSTRUCTION	11,709,711	22,833,936	34,543,647
1.5.2	PROCUREMENT FEES	117,097	228,339	>> <u>\$345,436</u>
	SUBTOTAL INCLUDING ESCALATION	12,694,986	24,755,222	>> \$37,450,208
	PROJECT CONTINGENCY			
	MANAGEMENT RESERVE			>> \$0
	CONTINGENCY			>> \$13,149,792
	TOTAL ESTIMATED COST			>> \$50,600,000

PROJECT COST PARAMETERS

EDI AS A % OF CONST. + GFE= **0.00%**

CONTINGENCY= **35.11%**

DATE 28-Jan-1998

TIME: 10:13:24

REPORT NAME: **Detail Cost Estimate Sheet**

PREPARED BY: **S.L.Coward/smb**

[illegible]

[illegible]

Rev 6-96
PROJECT NAME: ICPP Bin Set Closure
D&D of Equipment
LOCATION 1: INEEL / ICPP
REQUESTOR: B. C. Spaulding

TYPE OF ESTIMATE: Planning
PROJECT NO.: 2423D&D
PREPARED BY: S.L.Coward/smb

DATE 28-Jan-1998
TIME: 10:13:24
REPORT NAME: Detail Cost Estimate Sheet

CODE	DESCRIPTION	QTY	UOM	MATL UNIT COST	CREW SUB	UNIT LAB HOURS	TOTAL LAB HRS	LABOR	CONST. EQUIP.	MAT'L	S/C (OTHER 1)	TOTAL COST
1.3.13	SPECIAL CONSTRUCTION Grouting Manifolds - Class C - Allowance - 8 ea @ 300 sf	1	lot			0.000					537,274	537,274
	LDUA's - Allowance - 7 ea @ 150 sf	1	lot			0.000					209,873	209,873
	Pipe Crawler Robots - Allowance - 7 ea @ 150 sf	1	lot			0.000					209,873	209,873
	Tractor Robots - Allowance - 53 ea @ 250 sf	1	lot			0.000					2,648,393	2,648,393
	Misc Robot Wire and Hose Lines - Allowance - 1 ea @ 1000 sf	1	lot			0.000					199,879	199,879
	Waste Disposal - quantities as stated in EDF											
	- Solid Waste	500	cf			0.000					540	540
	- Radioactive Waste	10,000	cf			0.000					3,000,000	3,000,000
	- Mixed Waste	2,200	cf			0.000					275,000	275,000
	SPECIAL CONSTRUCTION S/T						0				\$*,***,***	\$11,709,711
	PROJECT SUBTOTAL						0	\$0	\$0	\$0	\$12,577,889	\$12,577,889

Lockheed Martin Idaho Technologies Co.

Rev 6-96

CONTINGENCY ANALYSIS

PROJECT NAME: ICPP Bin Set Closure

TYPE OF ESTIMATE: Planning

DATE: 28-Jan-1998

D&D of Equipment

PROJECT NO: 2423D&D

TIME: 09:58:43

LOCATION 1: INEEL / ICPP

PREPARED BY: S.L.Coward/smb

REQUESTOR: B. C. Spaulding

REPORT NAME: Contingency Analysis

PROBABLE % VARIATION									PROJECT CONTINGENCY		SUMMARY
WBS Element	Cost Estimate Element	Total Cost w/o Contingency	% Total Cost	Prob. % Var. From Est.		Wt. % of Prob.		Contingency	%	Cost	Total Cost by Element
				-	+	-	+				
1.1.1	DESIGN ENGINEERING TITLE I & II	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.1.2	TITLE III INSPECTION	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.2.1	PROJECT MANAGEMENT	868,178	2.32	10	40	0.23	0.93	0.811%	2.32%	304,841	1,173,019
1.2.2	CONSTRUCTION MANAGEMENT	0	0.00	0	0	0.00	0.00	0.000%	0.00%	0	0
1.3.13	SPECIAL CONSTRUCTION	11,709,711	31.27	10	40	3.13	12.51	10.944%	31.27%	4,111,600	15,821,311
1.5.2	PROCUREMENT FEES	117,097	0.31	10	40	0.03	0.13	0.109%	0.31%	41,116	158,213
	ESCALATION	24,755,222	66.10	10	40	6.61	26.44	23.136%	66.10%	8,692,235	33,447,457
SUBTOTAL		37,450,208	100.00					35.000%			
CALCULATED CONTINGENCY		13,107,573									
RESULTANT TEC		50,557,781									
ROUNDED TEC		50,600,000									
PROJECT CONTINGENCY		13,149,792						35.11%			
MANAGEMENT RESERVE		0									
CONTINGENCY		13,149,792									
TOTAL ESTIMATED COST		50,600,000								13,149,792	50,600,000

CONFIDENCE LEVEL AND ASSUMED RISKS:

The Lockheed Idaho Technologies Co. Cost Estimate Contingency Analysis Model is based on the applied contingency and the assumptions upon which the estimate was predicated. The model is applied with a suggested risk level of 18% and a level of confidence of 90% the estimate will fall within the bid range. The Contingency Analysis is based on a weighted average to provide a 90 % probability of underrun and a 10% probability of overrun.

CONTINGENCY ANALYSIS GUIDE BY TYPE OF ESTIMATE

Guidelines established by DOE/FM 50, Cost Estimating Guide, Vol. 6, Cost Guide, and as presented in the INEL Cost Estimating Guide.

PLANNING 20% - 30%
 Experimental/Special Conditions.....Up to 50%
 Conceptual 15% - 25%
 Experimental/Special Conditions.....Up to 40%
 TITLE I 10% - 20%
 TITLE II 5% - 15%
 TITLE III/AFC Market Conditions

G&A/PIF ADDER CALCULATION SHEET
ICPP BIN SET CLOSURE
CLOSURE TO RCRA LANDFILL STANDARDS; CLEAN FILL; ESCALATED

D&D OF EQUIPMENT

PROCUREMENT FEE:

CONSTRUCTION =	\$34,543,647		
GFE =			
Subtotal	\$34,543,647		
FEE @ 1% =	\$34,543,647	* 0.01 =	\$345,436

G&A @ 23% (with a ceiling of \$500,000 imposed per year, 1 yr)

CONSTRUCTION OR CEILING * 1 YEARS =	\$500,000		
GFE =	\$0		
PROCUREMENT FEE =	\$345,436		
Subtotal	\$845,436		
FEE @ 23% =	\$845,436	* 0.23 =	\$194,450

PIF @ 5.5%

CONSTRUCTION =	\$11,709,711		
GFE =	\$0		
PROCUREMENT FEE =	\$345,436		
G&A =	\$194,450		
Subtotal	\$12,249,598		
FEE @ 5.5% =	\$12,249,598	* 0.055 =	\$673,728

TOTAL PROCUREMENT FEE:	\$345,436
TOTAL G&A FEE:	\$194,450
TOTAL PIF:	\$673,728

**Life Cycle Cost and Yearly
Cash Flow Estimates**

The options numbers in the Life-Cycle Costs (LCC) do not match the final option numbers in the report, as these estimates were prepared prior to determining that it is not feasible to create an NRC Class A landfill following Risk-Based Clean Closure (RBCC) or Closure to Landfill Standards (CLFS).

For the purposes of the LCC section only, the following key is provided:

- Option 1: Risk-Based Clean Closure; NRC Class C fill (Option 1 in LCC)
- Option 2: Risk-Based Clean Closure; Clean fill (Option 3 in LCC)
- Option 3: Closure to Landfill Standards; NRC Class C fill (Option 4 in LCC)
- Option 4: Closure to Landfill Standards; Clean fill (Option 6 in LCC)

Lockheed Martin Idaho Technologies Company**INTERDEPARTMENTAL COMMUNICATION****Date:** February 3, 1998**To:** Bryan Spaulding MS 3765 6-8633**From:** R. J. Turk/M.M. Plum MS 3875 6-3611**Subject:** ECONOMIC AND LIFE CYCLE ANALYSIS CONDUCTED FOR THE
CALCINE SOLIDS STORAGE CLOSURE STUDY OPTIONS - RJT-27-98**Purpose:**

As requested an Economic and Life-Cycle Cost (LCC) has been conducted to evaluate the proposed CALCINE SOLIDS STORAGE CLOSURE STUDY OPTIONS. Each option proposes a different method for the closure of eight bins and the eight vaults at ICPP. At your direction Options 1,3,4 and 6 were evaluated in this model.

Option one: Risked Based Clean Closure; Class C fill.**Option three:** Risked Based Clean Closure; Clean fill.**Option four:** Close to RCRA Landfill Standards, Class C fill.**Option six:** Close to RCRA Landfill Standards, Clean fill

The above options would then be turned over to CERCLA for monitoring after completion because contaminants will remain on the site.

This economic analysis is based on information provided by B. Spaulding, Lee Toutt, Max Christensen, Michelle Dahlmeir, and other team members. S. L. Coward provided cost estimates for the various options.

Methodology:

The Economic Evaluation assumed a maximum 29-year period, (2009-2037) since this is the estimated time required to complete all of the anticipated remediation activities. If monitoring will be required after closure, the analysis assumed CERCLA would provide this service at no cost. The LCC is identified for each alternative by evaluating the initial development, and other closure costs over the life-cycle. A discounted LCC analysis assumes a current 1998-dollar basis discounted at 6.30% per the Office of Management and Budget (OMB) Circular A-94. All costs are conservatively discounted assuming the end-of-year convention.

Assumptions:

The scope of work and requirements of all related activities are vague at this time. Facility and processing costs are typically taken from reference cost estimates of similar scope; however, projects of this magnitude are not available. All costs are assumed to be reasonable for the purposes of the estimate and reflect historical experience associated with DD&D work at the INEEL.

The LCC analysis has been generated to match the division provided by cost estimating. These costs were allocated on an average monthly cost and duration of the activities which includes Permitting, Direct and Indirect Construction, Performance Incentive Fee (PIF), Procurement fee, Engineering, Inspection, Project Management, Construction Management, Escalation and Contingency costs.

Results:

Option one: Risked Based Clean Closure; Class C fill- \$ 94.0 million

Option three: Risked Based Clean Closure; Clean fill. - \$ 77.8 million

Option four: Close to RCRA Landfill Standards, Class C fill. - \$ 64.4 million

Option six: Close to RCRA Landfill Standards, Clean fill-\$ 46.4 million

(All costs are reported as Discounted LCC)

Attachments:

cc: R. J. Turk/M.M. Plum File

Bin Set Option 1 risk based clean closure Class C Fill Life-Cycle Cost (LCC) Analysis			fiscal year counting year Escalation Factor	1999 1	2000 2	2001 3	2002 4	2003 5	2004 6	2005 7	2006 8	2007 9	2008 10
				1.024	1.053	1.082	1.112	1.144	1.178	1.209	1.242	1.277	1.313
Closure Operation Activities				all costs are in 1,000's									
Unescalated Closure Activities													
Regulatory Compliance													
Fill Vaults with Clean Grout													
Clean Bins with Robots													
Walls													
Pipes													
Floor													
Fill Bins with NRC Class C Grout													
Sub-Total Closure Activities (unescalated)				0	0	0	0	0	0	0	0	0	0
plus escalation of				0	0	0	0	0	0	0	0	0	0
plus management reserve of				0	0	0	0	0	0	0	0	0	0
plus contingency of				0	0	0	0	0	0	0	0	0	0
Total Closure Activity Cost including escalation, mgt reserve & contingency				0	0	0	0	0	0	0	0	0	0
Operations													
Operation Activities are included in Closure Operation Activities above													
Total Operations including escalation, mgt reserve, & contingency				0	0	0	0	0	0	0	0	0	0
Post Operations to Greenfield Site Requirements													
D&D Equipment													
Sub-Total Post-Operations (unescalated)				0	0	0	0	0	0	0	0	0	0
plus Escalation				0	0	0	0	0	0	0	0	0	0
plus Post-Operations Contingency @ 30.0%				0	0	0	0	0	0	0	0	0	0
Total Post-Operations (w/ escalation & contingency)				0	0	0	0	0	0	0	0	0	0
Total Cost (unescalated)				0	0	0	0	0	0	0	0	0	0
Cumulative Total LCC (unescalated)				0	0	0	0	0	0	0	0	0	0
Total Cost (w/ escalation, mgt reserve, & contingency)				0	0	0	0	0	0	0	0	0	0
Cumulative Total LCC (escalated)				0	0	0	0	0	0	0	0	0	0
discount factor @ OMB discount rate of 6.30%			for escalated costs	1.003	1.130	1.201	1.277	1.357	1.443	1.534	1.630	1.733	1.842
Discounted Annual Cost				0	0	0	0	0	0	0	0	0	0
Cumulative Discounted LCC				0	0	0	0	0	0	0	0	0	0

Bin Set Option 1 risk based clean closure Class C Fill Life-Cycle Cost (LCC) Analysis		fiscal year counting year Escalation Factor	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
			11	12	13	14	15	16	17	18	19	20
			1.350	1.387	1.426	1.466	1.507	1.550	1.593	1.638	1.683	1.730
		all costs are in 1,000's										
Closure Operation Activities												
Unescalated Closure Activities												
Regulatory Compliance												
Fill Vaults with Clean Grout			748	2,068	2,068	2,068	2,068	2,239		982		
Clean Bins with Robots								327				
Walls								655				
Pipes								312				
Floor									2,636			
Fill Bins with NRC Class C Grout												
Sub-Total Closure Activities (unescalated)			748	2,068	2,068	2,068	2,068	3,534	3,618	0	0	0
plus escalation of			665	2,779	2,779	2,779	2,779	3,260	3,553	0	0	0
plus management reserve of			98	394	394	394	394	466	503	0	0	0
plus contingency of			411	1,644	1,644	1,644	1,644	1,948	2,102	0	0	0
Total Closure Activity Cost including escalation, mgt reserve & contingency			1,851	7,803	7,803	7,803	7,803	9,236	9,976	0	0	0
Operations												
Operation Activities are included in Closure Operation Activities above												
Total Operations including escalation, mgt reserve, & contingency			0	0	0	0	0	0	0	0	0	0
Post Operations to Greenfield Site Requirements												
D&D Equipment												
Sub-Total Post-Operations (unescalated)			0	0	0	0	0	0	0	0	0	0
plus escalation of			0	0	0	0	0	0	0	0	0	0
plus Post-Operations Contingency @ 30.0%			0	0	0	0	0	0	0	0	0	0
Total Post-Operations (w/ escalation & contingency)			0	0	0	0	0	0	0	0	0	0
Total Cost (unescalated)			748	2,068	2,068	2,068	2,068	3,534	3,618	0	0	0
Cumulative Total LCC (unescalated)			748	3,732	6,718	9,704	12,690	16,225	20,042	20,042	20,042	20,042
Total Cost (w/ escalation, mgt reserve, & contingency)			1,851	7,803	7,803	7,803	7,803	9,236	9,976	0	0	0
Cumulative Total LCC (escalated)			1,851	9,753	17,556	25,359	33,162	42,397	52,373	52,373	52,373	52,373
discount factor @ OHB discount rate of 6.30%		for escalated costs	1.858	2.082	2.213	2.352	2.500	2.656	2.825	3.003	3.193	3.394
Discounted Annual Cost			698	3,748	3,528	3,317	3,121	3,475	3,531	0	0	0
Cumulative Discounted LCC			698	4,745	8,271	11,588	14,709	18,184	21,715	21,715	21,715	21,715

Bin Set Option 1 risk based clean closure Class C Fill Life-Cycle Cost (LCC) Analysis		fiscal year counting year Escalation Factor	2019 21 1,779	2020 22 1,829	2021 23 1,880	2022 24 1,933	2023 25 1,987	2024 26 2,042	2025 27 2,100	2026 28 2,158	2027 29 2,219	2028 30 2,281
all costs are in 1,000's												
Closure Operation Activities												
Unescalated Closure Activities												
Regulatory Compliance												
Fill Vaults with Clean Grout			1,309				438	873			545	764
Clean Bins with Robots												
Walls			2,621	655			874	2,621	1,966		1,092	2,621
Pipes			1,249	312			418	1,249	936		520	1,249
Floor				8,507	5,671				2,836	11,343	9,452	
Fill Bins with NRC Class C Grout								2,510	1,394		558	3,347
Sub-Total Closure Activities (unescalated)			5,179	9,474	5,671	0	1,726	7,253	7,132	11,343	12,168	7,980
plus escalation of			4,821	8,819	5,279	0	1,607	6,751	6,639	10,558	11,326	7,426
plus management reserve of			683	1,249	748	0	228	956	940	1,405	1,604	1,052
plus contingency of			2,651	5,216	3,122	0	950	3,993	3,927	6,244	6,699	4,393
Total Closure Activity Cost including escalation, mgt reserve & contingency			13,534	24,758	14,820	0	4,511	18,952	18,638	29,640	31,797	20,854
Operations												
Operation Activities are included in Closure Operation Activities above												
Total Operations including escalation, mgt reserve, & contingency			0	0	0	0	0	0	0	0	0	0
Post Operations to Greenfield Site Requirements												
D&D Equipment			0	0	0	0	0	0	0	0	0	0
Sub-Total Post-Operations (unescalated)			0	0	0	0	0	0	0	0	0	0
plus Escalation			0	0	0	0	0	0	0	0	0	0
plus Post-Operations Contingency @ 30.0%			0	0	0	0	0	0	0	0	0	0
Total Post-Operations (w/ escalation & contingency)			0	0	0	0	0	0	0	0	0	0
Total Cost (unescalated)			5,179	9,474	5,671	0	1,726	7,253	7,132	11,343	12,168	7,980
Cumulative Total LCC (unescalated)			25,221	34,696	40,367	40,367	42,093	49,348	56,478	67,821	79,989	87,969
Total Cost (w/ escalation, mgt reserve, & contingency)			13,534	24,758	14,820	0	4,511	18,952	18,638	29,640	31,797	20,854
Cumulative Total LCC (escalated)			65,907	90,685	105,485	105,485	109,996	128,948	147,587	177,227	209,023	229,877
discount factor @ OHM discount rate of 8.30% for escalated costs			3,607	3,835	4,076	4,333	4,606	4,896	5,205	5,533	5,881	6,252
Discounted Annual Cost			3,782	8,456	3,636	0	979	3,871	3,581	5,357	5,406	3,336
Cumulative Discounted LCC			25,466	31,922	35,558	35,558	36,538	40,409	43,989	49,347	64,753	68,089

Bin Set Option 1 risk based clean closure Class C Fill Life-Cycle Cost (LCC) Analysis			fiscal year counting year Escalation Factor	2020	2030	2031	2032	2033	2034	2035	2036	2037	Total Cost
				31	32	33	34	35	36	37	38	39	
				2.345	2.410	2.478	2.547	2.619	2.692	2.767	2.845	2.924	
				all costs are in 1,000's									
Closure Operation Activities													
Unescalated Closure Activities													
Regulatory Compliance													14,930
Fill Vaults with Clean Grout				873	436	218	2,291	100					9,164
Clean Bins with Robots													
Walls				3,277	1,066	437	3,495	437					22,718
Pipes				1,561	930	208	1,665	208					10,621
Floor				4,726	14,178	17,959	8,507	9,452	2,636				98,302
Fill Bins with NRC Class C Grout				1,116	1,394	1,394	3,347	3,347		1,116			21,474
Sub-Total Closure Activities (unescalated)				11,552	17,517	20,217	19,304	13,653	6,182	1,116	0	0	177,410
plus escalation of				10,753	16,305	16,818	17,969	12,615	5,755	1,038	0	0	155,138
plus management reserve of				1,523	2,309	2,665	2,545	1,786	615	147	0	0	23,396
plus contingency of				6,359	9,643	11,130	10,627	7,461	3,403	614	0	0	97,668
Total Closure Activity Cost including escalation, mgt reserve & contingency				30,187	45,775	52,829	50,446	35,416	19,155	2,915	0	0	483,600
Operations													
Operation Activities are included in Closure Operation Activities above													
Total Operations including escalation, mgt reserve, & contingency				0	0	0	0	0	0	0	0	0	0
Post Operations to Greenfield Site Requirements													
D&D Equipment								2,539	2,539	2,539	2,539	2,539	12,095
Sub-Total Post-Operations (unescalated)				0	0	0	0	2,539	2,539	2,539	2,539	2,539	12,095
plus Escalation				0	0	0	0	4,951	4,951	4,951	4,951	4,951	24,755
plus Post-Operations Contingency @ 30.0%				0	0	0	0	2,630	2,630	2,630	2,630	2,630	13,150
Total Post-Operations (w/ escalation & contingency)				0	0	0	0	10,120	10,120	10,120	10,120	10,120	50,000
Total Cost (unescalated)				11,552	17,517	20,217	19,304	16,092	8,721	3,655	2,539	2,539	190,105
Cumulative Total LCC (unescalated)				99,621	117,038	137,255	156,559	172,651	181,372	185,027	187,566	190,105	
Total Cost (w/ escalation, mgt reserve, & contingency)				30,187	45,775	52,829	50,446	45,536	28,275	13,035	10,120	10,120	614,200
Cumulative Total LCC (escalated)				260,064	305,838	356,668	409,114	454,650	480,925	493,960	504,080	514,200	
discount factor @ OMB discount rate of 6.30% for escalated costs				6,646	7,064	7,509	7,982	8,485	9,020	9,588	10,182	10,834	
Discounted Annual Cost				4,542	6,480	7,035	8,320	8,366	2,913	1,360	893	934	94,032
Cumulative Discounted LCC				62,631	69,111	76,146	82,468	87,632	90,745	92,105	93,098	94,032	

TOTAL ANNUAL COST (escalated)
BIN SET Risk Based Class C Fill OPTION 1

CUMULATIVE DISCOUNTED LCC
BIN SET Risk Based Class C Fill OPTION 1

Bin Set Option 3 risk based "clean" closure Clean Fill Life-Cycle Cost (LCC) Analysis		fiscal year counting year Escalation Factor	2009 11 1.350	2010 12 1.387	2011 13 1.428	2012 14 1.468	2013 15 1.507	2014 16 1.550	2015 17 1.593	2016 18 1.638	2017 19 1.683	2018 20 1.730
all costs are in 1,000's												
Closure Operation Activities												
Unescalated Closure Activities												
Regulatory Compliance												
FIM Vaults with Clean Grout												
Clean Bins with Robots												
Walls												
Pipes												
Floor												
FIM Bins with NRC Class C Grout												
Sub-Total Closure Activities (unescalated)			0	0	0	1,176	1,568	1,568	5,934	328	0	0
plus escalation of			0	0	0	1,104	1,472	1,472	5,570	306	0	0
plus management reserve of			0	0	0	155	206	206	780	43	0	0
plus contingency of			0	0	0	643	858	858	3,245	179	0	0
Total Closure Activity Cost including escalation, mgt reserve & contingency			0	0	0	3,078	4,104	4,104	15,529	857	0	0
Operations												
Operation Activities are included in Closure Operation Activities above												
Total Operations including escalation, mgt reserve, & contingency			0	0	0	0	0	0	0	0	0	0
Post Operations to Greenfield Site Requirements												
D&D Equipment												
Sub-Total Post-Operations (unescalated)			0	0	0	0	0	0	0	0	0	0
plus Escalation			0	0	0	0	0	0	0	0	0	0
plus Post-Operations Contingency @ 30.0%			0	0	0	0	0	0	0	0	0	0
Total Post-Operations (w/ escalation & contingency)			0	0	0	0	0	0	0	0	0	0
Total Cost (unescalated)			0	0	0	1,176	1,568	1,568	5,934	328	0	0
Cumulative Total LCC (unescalated)			0	0	0	1,176	2,744	4,313	10,247	10,575	10,575	10,575
Total Cost (w/ escalation, mgt reserve, & contingency)			0	0	0	3,078	4,104	4,104	15,529	857	0	0
Cumulative Total LCC (escalated)			0	0	0	3,078	7,182	11,286	26,815	27,672	27,672	27,672
discount factor @ OMB discount rate of 6.30%			1.958	2.082	2.213	2.352	2.500	2.658	2.825	3.003	3.193	3.394
Discounted Annual Cost			0	0	0	1,309	1,641	1,644	5,498	286	0	0
Cumulative Discounted LCC			0	0	0	1,309	2,950	4,494	9,990	10,276	10,276	10,276

Bin Set Option 3 risk based "clean" closure Clean Fill Life-Cycle Cost (LCC) Analysis			fical year counting year Escalation Factor	2019 21 1.779	2020 22 1.829	2021 23 1.880	2022 24 1.933	2023 25 1.987	2024 26 2.042	2025 27 2.100	2026 28 2.158	2027 29 2.219	2028 30 2.281
				all costs are in 1,000's									
Closure Operation Activities													
Unescalated Closure Activities													
Regulatory Compliance													
FM Vaults with Clean Grout				785	548			218	1,092				1,748
Clean Bins with Robots													
Walls				1,529	1,748			437	2,822	2,185			3,485
Pipes				728	832			208	1,249	1,041			1,665
Floor					3,781	10,397				1,890	11,343	9,452	1,665
FM Bins with NRC Case C Grout						252	1,512					504	1,512
Sub-Total Closure Activities (unescalated)				3,022	6,907	10,649	1,512	863	4,962	5,118	11,343	9,956	8,420
plus escalation of				2,836	6,483	9,995	1,419	810	4,658	4,801	10,648	9,344	7,903
plus management reserve of				397	908	1,400	199	114	652	672	1,481	1,309	1,107
plus contingency of				1,653	3,777	5,824	827	472	2,714	2,798	6,203	5,445	4,805
Total Closure Activity Cost including escalation, mgt reserve & contingency				7,908	18,075	27,868	3,957	2,260	12,986	13,387	29,682	26,054	22,034
Operations													
Operation Activities are included in Closure Operation Activities above													
Total Operations including escalation, mgt reserve, & contingency				0	0	0	0	0	0	0	0	0	0
Post Operations to Greenfield Site Requirements													
DAD Equipment													
Sub-Total Post-Operations (unescalated)				0	0	0	0	0	0	0	0	0	0
plus Escalation				0	0	0	0	0	0	0	0	0	0
plus Post-Operations Contingency @ 30.0%				0	0	0	0	0	0	0	0	0	0
Total Post-Operations (w/ escalation & contingency)				0	0	0	0	0	0	0	0	0	0
Total Cost (unescalated)				3,022	6,907	10,649	1,512	863	4,962	5,118	11,343	9,956	8,420
Cumulative Total LCC (unescalated)				13,597	20,504	31,153	32,665	33,529	38,491	43,607	54,950	64,906	73,326
Total Cost (w/ escalation, mgt reserve, & contingency)				7,908	18,075	27,868	3,957	2,260	12,986	13,387	29,682	26,054	22,034
Cumulative Total LCC (escalated)				35,581	53,856	81,525	85,481	87,741	100,727	114,114	143,797	169,851	191,885
discount factor @ OMB discount rate of 6.30% for escalated costs				3,607	3,835	4,078	4,333	4,606	4,896	5,205	5,533	5,881	6,252
Discounted Annual Cost				2,192	4,714	6,837	913	491	2,052	2,572	3,365	4,430	5,524
Cumulative Discounted LCC				12,488	17,182	24,019	24,932	25,422	28,075	30,647	36,012	40,442	43,968

TOTAL ANNUAL COST (escalated)
BIN SET Risk Based "Clean" Fill OPTION 3

CUMULATIVE DISCOUNTED LCC BIN SET Risk Based "Clean" Fill OPTION 3

Bin Set Option 4 closure to RCRA solids Class C Fill
Life-Cycle Cost (LCC) Analysis

fiscal year
counting year
Escalation Factor

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	1	2	3	4	5	6	7	8	9	10
	1.024	1.053	1.082	1.112	1.144	1.176	1.209	1.242	1.277	1.313
all costs are in 1,000's										
Closure Operation Activities										
Unescalated Closure Activities										
Regulatory Compliance										
Fill Vaults with Clean Grout										
Clean Bins with Robots										
Walls										
Pipes										
Floor										
Fill Bins with NRC Class C Grout										
Sub-Total Closure Activities (unescalated)	0	0	0	0	0	0	0	0	0	0
plus escalation of	0	0	0	0	0	0	0	0	0	0
plus management reserve of	0	0	0	0	0	0	0	0	0	0
plus contingency of	0	0	0	0	0	0	0	0	0	0
Total Closure Activity Cost including escalation, mgt reserve & contingency	0	0	0	0	0	0	0	0	0	0
Operations										
Operation Activities are included in Closure Operation Activities above										
Total Operations including escalation, mgt reserve, & contingency	0	0	0	0	0	0	0	0	0	0
Post Operations to Greenfield Site Requirements										
D&D Equipment										
Sub-Total Post-Operations (unescalated)	0	0	0	0	0	0	0	0	0	0
plus escalation	0	0	0	0	0	0	0	0	0	0
plus Post-Operations Contingency @ 30.0%	0	0	0	0	0	0	0	0	0	0
Total Post-Operations (w/ escalation & contingency)	0	0	0	0	0	0	0	0	0	0
Total Cost (unescalated)	0	0	0	0	0	0	0	0	0	0
Cumulative Total LCC (unescalated)	0	0	0	0	0	0	0	0	0	0
Total Cost (w/ escalation, mgt reserve, & contingency)	0	0	0	0	0	0	0	0	0	0
Cumulative Total LCC (escalated)	0	0	0	0	0	0	0	0	0	0
discount factor @ OMB discount rate of 6.30% for escalated costs	1.063	1.130	1.201	1.277	1.357	1.443	1.534	1.630	1.733	1.842
Discounted Annual Cost	0	0	0	0	0	0	0	0	0	0
Cumulative Discounted LCC	0	0	0	0	0	0	0	0	0	0

Bin Set Option 4 closure to RCRA sludge Class C Fill Life-Cycle Cost (LCC) Analysis		fiscal year counting year Escalation Factor	2009 11 1.350	2010 12 1.387	2011 13 1.420	2012 14 1.460	2013 15 1.507	2014 16 1.550	2015 17 1.593	2016 18 1.638	2017 19 1.683	2018 20 1.730
all costs are in 1,000's												
Closure Operation Activities												
Unescalated Closure Activities												
Regulatory Compliance			679	2,715	2,715	2,715	2,715	2,715	679			
Fill Vaults with Clean Grout										328		
Clean Bins with Robots										0		
Walls										0		
Pipes										1,768		
Floor										0		
Fill Bins with MRC Class C Grout			679	2,715	2,715	2,715	2,715	2,715	1,682	0	0	0
Sub-Total Closure Activities (unescalated)			617	2,486	2,486	2,486	2,486	4,810	1,510	0	0	0
plus escalation of			89	358	358	358	358	634	219	0	0	0
plus management reserve of			372	1,487	1,487	1,487	1,487	2,634	910	0	0	0
plus contingency of			372	1,487	1,487	1,487	1,487	2,634	910	0	0	0
Total Closure Activity Cost including escalation, mgt reserve & contingency			1,760	7,025	7,025	7,025	7,025	12,449	4,300	0	0	0
Operations												
Operation Activities are included in Closure Operation Activities above												
Total Operations including escalation, mgt reserve, & contingency			0	0	0	0	0	0	0	0	0	0
Post Operations to Greenfield Site Requirements												
D&D Equipment			0	0	0	0	0	0	0	0	0	0
Sub-Total Post-Operations (unescalated)			0	0	0	0	0	0	0	0	0	0
plus Escalation			0	0	0	0	0	0	0	0	0	0
plus Post-Operations Contingency @ 30.0%			0	0	0	0	0	0	0	0	0	0
Total Post-Operations (w/ escalation & contingency)			0	0	0	0	0	0	0	0	0	0
Total Cost (unescalated)			679	2,715	2,715	2,715	2,715	4,810	1,682	0	0	0
Cumulative Total LCC (unescalated)			679	3,393	6,108	8,822	11,537	16,347	18,009	18,009	18,009	18,009
Total Cost (w/ escalation, mgt reserve, & contingency)			1,756	7,025	7,025	7,025	7,025	12,449	4,300	0	0	0
Cumulative Total LCC (escalated)			1,756	6,781	15,806	22,831	29,856	42,305	46,605	46,605	46,605	46,605
discount factor @ OMB discount rate of 6.30%			1,958	2,082	2,213	2,352	2,500	2,658	2,825	3,003	3,183	3,364
Discounted Annual Cost			897	3,375	3,175	2,987	2,810	4,684	1,522	0	0	0
Cumulative Discounted LCC			897	4,272	7,446	10,433	13,243	17,927	19,448	19,448	19,448	19,448

Bin Set Option 4 closure to RCRA stds Class C Fill Life-Cycle Cost (LCC) Analysis	fiscal year counting year Escalation Factor	2019 21 1.779	2020 22 1.829	2021 23 1.880	2022 24 1.933	2023 25 1.987	2024 26 2.042	2025 27 2.100	2026 28 2.158	2027 29 2.218	2028 30 2.281
		all costs are in \$,000's									
Closure Operation Activities											
Unescalated Closure Activities											
Regulatory Compliance											
Fill Vaults with Clean Grout		1,311				437	874			548	784
Clean Bins with Robots		0	0			0	0	0		0	0
Walls		0	0			0	0	0		0	0
Pipes		0	0			0	0	0		0	0
Floor		7,073	1,788			2,358	7,073	5,305		2,847	7,073
Fill Bins with NRC Class C Grout							2,510	2,231	3,347	837	
Sub-Total Closure Activities (unescalated)		8,384	1,788	0	0	2,795	10,457	7,538	3,347	4,330	7,838
plus escalation of		7,817	1,807	0	0	2,539	9,501	6,847	3,041	3,834	7,121
plus management reserve of		1,105	233	0	0	388	1,378	993	441	571	1,033
plus contingency of		4,591	968	0	0	1,830	5,727	4,127	1,833	2,371	4,282
Total Closure Activity Cost including escalation, mgt reserve & contingency		21,897	4,578	0	0	7,232	27,062	19,503	8,681	11,208	20,284
Operations											
Operation Activities are included in Closure Operation Activities above											
Total Operations including escalation, mgt reserve, & contingency		0	0	0	0	0	0	0	0	0	0
Post Operations to Greenfield Site Requirements											
D&D Equipment		0	0	0	0	0	0	0	0	0	0
Sub-Total Post-Operations (unescalated)		0	0	0	0	0	0	0	0	0	0
plus Escalation		0	0	0	0	0	0	0	0	0	0
plus Post-Operations Contingency @ 30.0%		0	0	0	0	0	0	0	0	0	0
Total Post-Operations (w/ escalation & contingency)		0	0	0	0	0	0	0	0	0	0
Total Cost (unescalated)		8,384	1,788	0	0	2,795	10,457	7,538	3,347	4,330	7,838
Cumulative Total LCC (unescalated)		28,393	28,181	28,181	28,181	30,956	41,413	48,949	52,295	56,625	64,463
Total Cost (w/ escalation, mgt reserve, & contingency)		21,897	4,578	0	0	7,232	27,062	19,503	8,681	11,208	20,284
Cumulative Total LCC (escalated)		68,302	72,879	72,879	72,879	80,111	107,173	126,676	135,337	146,543	166,827
discount factor @ OMB discount rate of 8.30% for escalated costs		3,607	3,835	4,078	4,333	4,608	4,898	5,205	5,533	5,881	6,252
Discounted Annual Cost		8,015	1,193	0	0	1,870	5,527	3,747	1,585	1,905	3,245
Cumulative Discounted LCC		25,463	26,656	26,656	26,656	28,227	33,754	37,501	39,086	40,972	44,218

Bin Set Option 4 closure to RCRA sids Class C Fill
Life-Cycle Cost (LCC) Analysis

fical year
counting year
Escalation Factor

	2020	2030	2031	2032	2033	2034	2035	2036	2037	Total Cost
	31	32	33	34	35	36	37	38	39	
	2,345	2,410	2,478	2,547	2,619	2,692	2,767	2,845	2,924	
all costs are in 1,000's										
Closure Operation Activities										
Unescalated Closure Activities										
Regulatory Compliance										
FM Vaults with Clean GROUT	874	437	218	2,293	100					14,930
Clean Bins with Robots										9,174
Walls	0	0	0	0	0					0
Pipes	0	0	0	0	0					0
Floor	8,842	5,305	1,179	9,431	1,179					61,303
FM Bins with NRC Class C GROUT	1,394	3,347	3,347	1,873	2,789					21,474
Sub-Total Closure Activities (unescalated)	11,110	9,089	4,744	13,398	4,077	0	0	0	0	106,861
plus escalation of	10,094	8,257	4,310	12,172	3,704	0	0	0	0	97,105
plus management reserve of	1,464	1,196	625	1,769	537	0	0	0	0	14,084
plus contingency of	6,084	4,977	2,596	7,337	2,233	0	0	0	0	58,530
Total Closure Activity Cost including escalation, mgt reserve & contingency	28,752	23,521	12,277	34,673	10,551	0	0	0	0	278,600
Operations										
Operation Activities are included in Closure Operation Activities above										
Total Operations including escalation, mgt reserve, & contingency	0	0	0	0	0	0	0	0	0	0
Post Operations to Greenfield Site Requirements										
D&D Equipment					2,539	2,539	2,539	2,539	2,539	12,095
Sub-Total Post-Operations (unescalated)	0	0	0	0	2,539	2,539	2,539	2,539	2,539	12,095
plus Escalation	0	0	0	0	4,951	4,951	4,951	4,951	4,951	24,755
plus Post-Operations Contingency @ 30.0%	0	0	0	0	2,630	2,630	2,630	2,630	2,630	13,160
Total Post-Operations (w/ escalation & contingency)	0	0	0	0	10,120	10,120	10,120	10,120	10,120	50,010
Total Cost (unescalated)	11,110	9,089	4,744	13,398	6,616	2,539	2,539	2,539	2,539	
Cumulative Total LCC (unescalated)	75,573	84,662	89,406	102,804	109,420	111,959	114,498	117,037	119,576	110,578
Total Cost (w/ escalation, mgt reserve, & contingency)	28,752	23,521	12,277	34,673	20,671	10,120	10,120	10,120	10,120	
Cumulative Total LCC (escalated)	105,578	210,099	231,376	266,049	286,720	296,840	306,960	317,080	327,200	327,200
discount factor @ OMB discount rate of 6.30% for escalated costs	6,648	7,064	7,509	7,982	8,485	8,920	9,388	9,880	10,394	
Discounted Annual Cost	4,328	3,330	1,835	4,344	2,436	1,122	1,055	963	934	64,391
Cumulative Discounted LCC	48,543	51,872	53,507	57,851	60,287	61,409	62,484	63,457	64,391	

TOTAL ANNUAL COST (escalated)
BIN SET RCRA stds Class C Fill OPTION 4

**CUMULATIVE DISCOUNTED LCC
BIN SET RCRA stds Class C Fill OPTION 4**

Bin Set Option 6 closure to RCRA stds "Clean" Fill Life-Cycle Cost (LCC) Analysis		fiscal year counting year Escalation Factor	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
			1	2	3	4	5	6	7	8	9	10
			1.024	1.053	1.082	1.112	1.144	1.178	1.209	1.242	1.277	1.313
			all costs are in 1,000's									
Closure Operation Activities												
Unescalated Closure Activities												
Regulatory Compliance												
Fill Vaults with Clean Grout												
Clean Bins with Robots												
Walls												
Pipes												
Floor												
Fill Bins with NRC Class C Grout												
Sub-Total Closure Activities (unescalated)			0	0	0	0	0	0	0	0	0	0
plus escalation of			0	0	0	0	0	0	0	0	0	0
plus management reserve of			0	0	0	0	0	0	0	0	0	0
plus contingency of			0	0	0	0	0	0	0	0	0	0
Total Closure Activity Cost including escalation, mgt reserve & contingency			0	0	0	0	0	0	0	0	0	0
Operations												
Operation Activities are included in Closure Operation Activities above												
Total Operations including escalation, mgt reserve, & contingency			0	0	0	0	0	0	0	0	0	0
Post Operations to Greenfield Site Requirements												
D&D Equipment												
Sub-Total Post-Operations (unescalated)			0	0	0	0	0	0	0	0	0	0
plus escalation			0	0	0	0	0	0	0	0	0	0
plus Post-Operations Contingency @ 30.0%			0	0	0	0	0	0	0	0	0	0
Total Post-Operations (w/ escalation & contingency)			0	0	0	0	0	0	0	0	0	0
Total Cost (unescalated)			0	0	0	0	0	0	0	0	0	0
Cumulative Total LCC (unescalated)			0	0	0	0	0	0	0	0	0	0
Total Cost (w/ escalation, mgt reserve, & contingency)			0	0	0	0	0	0	0	0	0	0
Cumulative Total LCC (escalated)			0	0	0	0	0	0	0	0	0	0
discount factor @ OMB discount rate of 6.30% for escalated costs			1.063	1.130	1.201	1.277	1.357	1.443	1.534	1.630	1.733	1.842
Discounted Annual Cost			0	0	0	0	0	0	0	0	0	0
Cumulative Discounted LCC			0	0	0	0	0	0	0	0	0	0

Bin Set Option 6 closure to RCRA site "Clean" Fill Life-Cycle Cost (LCC) Analysis			fiscal year counting year Escalation Factor	2009 11 1.350	2010 12 1.387	2011 13 1.426	2012 14 1.468	2013 15 1.507	2014 16 1.550	2015 17 1.593	2016 18 1.638	2017 19 1.683	2018 20 1.730
				all costs are in 1,000's									
Closure Operation Activities													
Unescalated Closure Activities													
Regulatory Compliance							1,176	1,568	1,568	322			
Fill Vaults with Clean Grout										963	328		
Clean Bins with Robots													
Walls										0			
Pipes										0			
Floor										1,768			
Fill Bins with NRC Class C Grout										722			
Sub-Total Closure Activities (unescalated)				0	0	0	1,176	1,568	1,568	3,965	328	0	0
plus escalation of				0	0	0	1,052	1,403	1,403	3,458	293	0	0
plus management reserve of				0	0	0	153	203	203	501	43	0	0
plus contingency of				0	0	0	629	838	838	2,067	175	0	0
Total Closure Activity Cost including escalation, mgt reserve & contingency				0	0	0	3,010	4,013	4,013	9,892	838	0	0
Operations													
Operation Activities are included in Closure Operation Activities above													
Total Operations including escalation, mgt reserve, & contingency				0	0	0	0	0	0	0	0	0	0
Post Operations to Greenfield Site Requirements													
D&D Equipment													
Sub-Total Post-Operations (unescalated)				0	0	0	0	0	0	0	0	0	0
plus Escalation				0	0	0	0	0	0	0	0	0	0
plus Post-Operations Contingency @ 30.0%				0	0	0	0	0	0	0	0	0	0
Total Post-Operations (w/ escalation & contingency)				0	0	0	0	0	0	0	0	0	0
Total Cost (unescalated)				0	0	0	1,176	1,568	1,568	3,965	328	0	0
Cumulative Total LCC (unescalated)				0	0	0	1,176	2,744	4,313	8,178	8,506	8,506	8,506
Total Cost (w/ escalation, mgt reserve, & contingency)				0	0	0	3,010	4,013	4,013	9,892	838	0	0
Cumulative Total LCC (escalated)				0	0	0	3,010	7,022	11,035	20,927	21,765	21,765	21,765
discount factor @ OMB discount rate of 6.30% for escalated costs				1.958	2.082	2.213	2.352	2.500	2.658	2.825	3.003	3.193	3.394
Discounted Annual Cost				0	0	0	1,278	1,905	1,810	3,501	279	0	0
Cumulative Discounted LCC				0	0	0	1,278	2,884	4,394	7,895	8,174	8,174	8,174

Bin Set Option 6 closure to RCRA stds "Clean" Fill Life-Cycle Cost (LCC) Analysis	fiscal year counting year Escalation Factor	2019 21 1.778	2020 22 1.829	2021 23 1.880	2022 24 1.933	2023 25 1.987	2024 26 2.042	2025 27 2.100	2026 28 2.158	2027 29 2.218	2028 30 2.281
all costs are in 1,000's											
Closure Operation Activities											
Unescalated Closure Activities											
Regulatory Compliance											
FM Vials with Clean Grout		765	548			218	1,092				1,748
Clean Bins with Robots											
Walls			0	0		0	0	0			0
Pipes			0	0		0	0	0			0
Floor		2,063	3,537	3,242		589	3,537	3,537	3,537	2,947	4,716
FM Bins with HRC Class C Grout				241	1,445					482	1,000
Sub-Total Closure Activities (unescalated)		2,828	4,083	3,483	1,445	808	4,629	3,537	3,537	3,429	8,148
plus escalation of		2,528	3,852	3,115	1,292	723	4,140	3,183	3,183	3,067	7,289
plus management reserve of		367	630	452	187	105	800	459	459	445	1,057
plus contingency of		1,812	2,183	1,862	772	432	2,475	1,891	1,891	1,833	4,358
Total Closure Activity Cost including escalation, mgt reserve & contingency		7,235	10,447	8,912	3,697	2,067	11,844	9,050	9,050	8,774	20,851
Operations											
Operation Activities are included in Closure Operation Activities above											
Total Operations including escalation, mgt reserve, & contingency		0	0	0	0	0	0	0	0	0	0
Post Operations to Greenfield Site Requirements											
D&D Equipment		0	0	0	0	0	0	0	0	0	0
Sub-Total Post-Operations (unescalated)		0	0	0	0	0	0	0	0	0	0
plus escalation		0	0	0	0	0	0	0	0	0	0
plus Post-Operations Contingency @ 30.0%		0	0	0	0	0	0	0	0	0	0
Total Post-Operations (w/ escalation & contingency)		0	0	0	0	0	0	0	0	0	0
Total Cost (unescalated)		2,828	4,083	3,483	1,445	808	4,629	3,537	3,537	3,429	8,148
Cumulative Total LCC (unescalated)		11,334	15,417	18,899	20,344	21,152	25,781	29,318	32,854	36,283	44,432
Total Cost (w/ escalation, mgt reserve, & contingency)		7,235	10,447	8,912	3,697	2,067	11,844	9,050	9,050	8,774	20,851
Cumulative Total LCC (escalated)		29,000	39,447	48,359	62,056	64,123	65,987	75,017	84,066	92,640	113,691
discount factor @ OMB discount rate of 6.30%	for escalated costs	3.607	3.835	4.078	4.333	4.600	4.898	5.205	5.533	5.881	6.252
Discounted Annual Cost		2,008	2,724	2,180	833	449	2,418	1,738	1,636	1,492	3,335
Cumulative Discounted LCC		10,180	12,904	15,091	15,944	16,393	18,612	20,550	22,186	23,678	27,013

Bin Set Option 6 closure to RCRA sids "Clean" Fill
Life-Cycle Cost (LCC) Analysis

	fiscal year counting year Escalation Factor	2029	2030	2031	2032	2033	2034	2035	2036	2037	Total Cost
		31	32	33	34	35	36	37	38	39	
		2.345	2.410	2.478	2.547	2.619	2.692	2.767	2.845	2.924	
all costs are in 1,000's											
Closure Operation Activities											
Unescalated Closure Activities											
Regulatory Compliance											4,705
PM Vaults with Clean Grout		874	874	437		1,311					9,174
Clean Bins with Robots											
Walls		0	0			0	0				0
Pipes		0	0			0	0				0
Floor		7,073	7,603	5,305	1,768	3,537	3,537	2,947			61,303
PM Bins with NRC Case C Grout			1,445	963	1,445	722		482	1,204		10,836
Sub-Total Closure Activities (unescalated)		7,947	9,881	6,705	3,213	5,570	3,537	3,429	1,204	0	86,018
plus escalation of		7,108	8,928	5,997	2,874	4,962	3,163	3,087	1,077	0	76,940
plus management reserve of		1,031	1,295	870	417	723	459	445	156	0	11,158
plus contingency of		4,248	5,338	3,684	1,718	2,977	1,891	1,833	644	0	45,964
Total Closure Activity Cost including escalation, mgt reserve & contingency		20,335	25,540	17,157	8,222	14,252	9,050	8,774	3,061	0	220,100
Operations											
Operation Activities are included in Closure Operation Activities above											
Total Operations including escalation, mgt reserve, & contingency		0	0	0	0	0	0	0	0	0	0
Post Operations to Greenfield Site Requirements											
DAD Equipment						2,539	2,539	2,539	2,539	2,539	12,695
Sub-Total Post-Operations (unescalated)		0	0	0	0	2,539	2,539	2,539	2,539	2,539	12,695
plus Escalation		0	0	0	0	4,951	4,951	4,951	4,951	4,951	24,755
plus Post-Operations Contingency @ 30.0%		0	0	0	0	2,630	2,630	2,630	2,630	2,630	13,150
Total Post-Operations (w/ escalation & contingency)		0	0	0	0	10,120	10,120	10,120	10,120	10,120	50,600
Total Cost (unescalated)		7,947	9,881	6,705	3,213	8,109	6,076	5,968	3,743	2,539	68,713
Cumulative Total LCC (unescalated)		82,379	82,381	89,086	72,270	60,363	56,463	92,431	96,174	96,713	
Total Cost (w/ escalation, mgt reserve, & contingency)		20,335	25,540	17,157	8,222	24,372	19,170	18,894	13,201	10,120	270,700
Cumulative Total LCC (escalated)		134,028	159,566	176,723	184,944	209,316	226,486	247,379	260,580	270,700	
discount factor @ OMS discount rate of 6.30%		8.648	7.064	7.509	7.982	8.485	8.020	8.568	10.162	10.834	
Discounted Annual Cost		3,080	3,615	2,285	1,030	2,872	2,125	1,971	1,295	934	48,200
Cumulative Discounted LCC		30,073	33,688	35,973	37,003	39,875	42,001	43,971	45,266	46,200	

TOTAL ANNUAL COST (escalated)
BIN SET RCRA stds "Clean" Fill OPTION 6

**CUMULATIVE DISCOUNTED LCC
BIN SET RCRA stds "Clean" Fill OPTION 6**