55.
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AUG 31 1994

ENGINEERING DATA TRANSMITTAL

Page 1 of 14

1. EDT № 700515

3. From: (Originating Organization)

PFP OPERATIONS

PFP FACILITY SYSTEMS ENGINEERING

4. Related EDT No.:

N/A

7. Purchase Order No.:

N/A

5. Proj./Prog./Dept./Div.: 15510 / K6C4B

6. Cog. Engr.: J.M. MORLEY

9. Equip./Component No.:

H0038 - H0043

8. Originator Remarks:

ISSUANCE OF TEEM DOCUMENT FOR HARRINGTON
LEVER HOISTS.

10. System/Bldg./Facility:

41 / 234-52

12. Major Assm. Dwg. No.:

N/A

13. Permit/Permit Application No.:

N/A

14. Required Response Date:

N/A

15.	DATA TRANSMITTED
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(F)

(G)

(H)

(1)

[illegible]

16. KEY

Impact Level (F)

Reason for Transmittal (G)

Disposition (H) & (I)

1, 2, 3, or 4 (see
MRP 5.43)

1. Approval 4. Review
2. Release 5. Post-Review
3. Information 6. Dist. (Receipt Acknow. Required)

1. Approved	4. Reviewed no/comment
2. Approved w/comment	5. Reviewed w/comment
3. Disapproved w/comment	6. Receipt acknowledged

(G)	(H)	SIGNATURE/DISTRIBUTION (See Impact Level for required signatures)										(G)	(H)
Reason	Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN	Reason	Disp.		
2	1	Cog. Eng.	J.M. MORLEY	T4-32		J.M. Morley		8/17/94	T4-32				
2	1	Cog. Mgr.	G.A. GLOVER	T4-20		G.A. Glover		8/18/94	T4-20				
		QA											
2	1	Safety	A.G. PINES	T4-10		A.G. Pines		8/17/94	T4-10				
		Env.											
3		Central Files		L8-04									
3		Osti (2)		L8-07									

18. <u><i>J. M. Smalley</i></u> Signature of EDT Originator	<u>8/17/94</u> Date	19. _____ Authorized Representative for Receiving Organization	<u>_____</u> Date	20. <u><i>J. M. Smalley</i></u> Cognizant Manager	<u>8/18/94</u> Date	21. DOE APPROVAL (if required) Ltr No. _____ ☐ Approved ☐ Approved w/comments ☐ Disapproved w/comments
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BD-7400-172 (07/91)

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UNREVIEWED SAFETY QUESTION CHANGES SCREENING FORM

Document Number

EDT 700515

pg 2 of 4

USQ Screening Number

Title

PFP Harrington Lever Hand Hoists; WHC-SD-CP-TEEM-066

QUESTIONS:

Does the referenced item:

N/A

No

Yes/Maybe

A. Make PROPOSED CHANGES to the facility or procedures which differ from conditions described in the safety basis?

☐☒☐

B. Make PROPOSED CHANGES that represent conditions that have not been analyzed in the safety basis?

☐☒☐

C. Describe tests or experiments which differ from those described in the safety basis?

☐☒☐

D. Is a change to the TSRs involved?

☐☒☐

BASIS (supporting information is required for each question; attach additional pages as necessary):

A. The system affected by this change is not described in WHC-SD-CP-SAR-021. This change does not affect the authorization basis.

B/C/D There are no procedures, tests or experiments affected by this change. No tests or experiments are involved.

☒ Agree

☐ Disagree (Requires explanation, attach additional pages as necessary)

USQE No. 1

Gerald P. Wilson

Signature

August 17, 1994

Date

Gerald P. Wilson

(Print Name)

USQE No. 2

GA Glover

Signature

8/18/94

Date

GA Glover

(Print Name)

UNREVIEWED SAFETY QUESTION (USQ) SCREENING AND SAFETY EVALUATION

1. Identification Number: **EDT 700515** *pg 3 of 4* 3 4 92/93/94
 Completion of page one of this form satisfies the Screening Evaluation Page 2 of 3

2. Title: **PFP HARRINGTON LEVER HOISTS; WHC-SD-CP-TEEM-066**

3. Qualified USQ Evaluator: **G.P. WILSON** Date: **08/17/94**

4. Peer Reviewer: **R.J. THOMAS**

5. Is the matter being evaluated a CHANGE or a DISCOVERY? (Circle One) **CHANGE**

6. USQ Screening (Answer the appropriate set of questions.)

Does the proposed change:

- A. Make changes in the facility as described in approved safety analyses? ☒ No ☐ Yes/Maybe
- B. Make changes in procedures as described in approved safety analyses? ☒ No ☐ Yes/Maybe
- C. Involve tests or experiments not described in approved safety analyses? ☒ No ☐ Yes/Maybe

Will response to the discovery:

- A. Require changes to the facility as described in the approved safety analyses? ☒ No ☐ Yes/Maybe
- B. Require changes in procedures described in the approved safety analyses? ☒ No ☐ Yes/Maybe
- C. Require tests or experiments not described in the approved safety analyses? ☒ No ☐ Yes/Maybe
- D. Require revision or addition to SAR beyond annual update? ☒ No ☐ Yes/Maybe

BASIS (supporting information is required for each question, attach additional pages as necessary; specifically note SAR section reviewed to come to conclusion):

6A. THE SYSTEM AFFECTED BY THIS CHANGE IS NOT DESCRIBED IN WHC-SD-CP-SAR-021. THIS CHANGE DOES NOT AFFECT THE AUTHORIZATION BASIS.

6B/C PROCEDURES, TESTS, OR EXPERIMENTS ARE NOT AFFECTED BY THIS CHANGE. NO TESTS OR EXPERIMENTS ARE INVOLVED.

7. Safety Analyses

- A. Will the proposed change or response to the discovery require a change to the existing Technical Specifications or Operational Safety Requirements? ☒ No ☐ Yes/Maybe
- B. Will the proposed change or discovery require additional Technical Specification or Operational Safety Requirements? ☒ No ☐ Yes/Maybe

BASIS (supporting information is required for each question, attach additional pages as necessary; specifically note Technical Specification/Operational Safety Requirements reviewed to come to conclusion):

7A/B. NO CHANGES TO THE OSR'S OR ADDITIONAL OSR'S ARE REQUIRED.

8. Post Review (Required if all questions answered "NO")

Reviewer: <u><i>G.P. Wilson</i></u> Safety Qualified USQ Evaluator (Print name, sign and date)	Date: <u><i>8/17/94</i></u>	If any question on page one in Blocks 6 or 7 is answered "Yes", completion of page two is required and is the Safety Evaluation
--	-----------------------------	---

Identification Number: EDT 700515 pg 4 of 4 SAFETY EVALUATION

Page 4 of 4

90 8/31/94

1. USQ Safety Evaluation:

These questions shall be answered if any question in block 6 or 7 is answered "YES."

A. Will the probability of an accident previously evaluated in approved safety analyses be increased?	☒ No	☐ Yes	☐ Maybe
B. Will the consequences of an accident previously evaluated in the approved safety analyses be increased?	☒ No	☐ Yes	☐ Maybe
C. Will the probability of a malfunction of equipment important to safety be increased?	☒ No	☐ Yes	☐ Maybe
D. Will the consequences of a malfunction of equipment important to safety be increased?	☒ No	☐ Yes	☐ Maybe
E. Will the possibility of an accident of a different type than any previously evaluated in approved safety analyses be created?	☒ No	☐ Yes	☐ Maybe
F. Will the possibility of a malfunction of a different type than any previously evaluated in the approved safety analyses be created?	☒ No	☐ Yes	☐ Maybe
G. Will the margin of safety as defined in the basis for any technical specification or safety analysis report be reduced?	☒ No	☐ Yes	☐ Maybe

BASIS (supporting information is required for each question, attach additional pages as necessary):

1A/B/C/D. THE PROBABILITY/CONSEQUENCES OF ACCIDENTS/MALFUNCTIONS DUE TO THIS CHANGE WILL NOT BE INCREASED OVER THAT ANALYZED IN THE FSAR.

1E/F/G. THIS CHANGE DOES NOT CREATE THE POSSIBILITY OF AN ACCIDENT/MALFUNCTION OF A DIFFERENT TYPE THAT THAT ANALYZED IN WHC-SD-HS-SAR-021, CHAPTER 9. THE MARGIN OF SAFETY WILL NOT BE REDUCED.

THIS CHANGE DOES NOT REPRESENT AN UNREVIEWED SAFETY QUESTION.

2. Plant Review Committee (PRC)*

3. Safety Review**

Meeting No. NA

Date: _____

PRC Chairman Concurrence
(Print name, sign and date)

Date: _____

Qualified USQ Evaluator
(Print name, sign and date)

* If PRC changes any answers, append basis for change.
** Post-review required if all seven "NO" boxes are checked by PRC.

RELEASE AUTHORIZATION

Document Number: WHC-SD-CP-TEEM-066

Document Title: PFP HARRINGTON LEVER HOISTS

Release Date: 08-30-94

* * * * *

This document was reviewed following the
procedures described in WHC-CM-3-4 and is:

APPROVED FOR PUBLIC RELEASE

* * * * *

WHC Information Release Administration Specialist:

Jamara Kohn for Chris Willingham
C. Willingham

(Signature)

08-30-94

(Date)

SUPPORTING DOCUMENT		8/31/94 1. Total Pages 1312	
2. Title PFP HARRINGTON LEVER HOISTS		3. Number WHC-SD-CP-TEEM-066	4. Rev No. 0
5. Key Words 3/4 TON THRU 1 1/2 TON LEVER HOISTS APPROVED FOR PUBLIC RELEASE CW 8/30/94		6. Author Name: J.M. MORLEY <i>J.M. Morley</i> Signature Organization/Charge Code 15510 K6C4D	
7. Abstract DOCUMENT IDENTIFIES VENDOR SUGGESTED MAINTENANCE, DEVIATIONS FROM SUGGESTED REQUIREMENTS AND PROVIDES SUPPORT FOR PREVENTIVE MAINTENANCE PROCEDURES.			
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9. Impact Level 3S			

TECHNICAL EVALUATION OF EQUIPMENT MAINTENANCE
WHC-SD-CP-TEEM-066
PFP HARRINGTON LEVER HOISTS

Issued by
WESTINGHOUSE HANFORD COMPANY

for the

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
RICHLAND, WASHINGTON

	Name (print or type)	Signature	Date
PREPARED BY:	<u>K.M. BLACK</u> Name/Title	<u>K.M. Black</u>	<u>8/17/94</u>
WHC APPROVALS:	<u>J.M. Morley</u> Cognizant Engineer	<u>J.M. Morley</u>	<u>8/17/94</u>
	<u>GA Glover</u> Manager, COG Engr.	<u>GA Glover</u>	<u>8/18/94</u>
	<u>[Signature]</u> Safety- HSF	<u>AG Pines</u>	<u>8/22/94</u>

Note: Harrington Lever Hoists is a Trade Mark of Harrington Hoists.

WHC-SD-CP-TEEM-066, REV 0
Technical Evaluation of Equipment Maintenance
PFP HARRINGTON LEVER HOISTS

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WHC-SD-CP-TEEM-066, REV 0
Technical Evaluation of Equipment Maintenance
PFP HARRINGTON LEVER HOISTS

1.0 - APPLICABLE EQUIPMENT

This Technical Evaluation of Equipment Maintenance (TEEM) is provided principally to document vendor suggested maintenance requirements and deviations from vendor suggested requirements, and provide documentation to support PM procedures. As additional maintenance activities are identified, they will be documented in later revisions.

This equipment is Safety Class 3. Safety class is provided here for reference only. (See WHC-SD-CP-TI-108 Rev 12 for verification)

This TEEM is applicable to the following hoists:

IDENTIFICATION NUMBER	EQUIPMENT
H0038	1 1/2 Ton capacity lever hoist, serial number 664007, located in the tool crib, Room 194 of the 234-5Z building.
H0039	1 1/2 Ton capacity lever hoist, serial number 664000, located in the tool crib, Room 194 of the 234-5Z building.
H0040	1 Ton capacity lever hoist, serial number 663518, located in the tool crib, Room 194 of the 234-5Z building.
H0041	1 Ton capacity lever hoist, serial number 663517, located in the tool crib, Room 194 of the 234-5Z building.
H0042	3/4 Ton capacity lever hoist, serial number 663505, located in the tool crib, Room 194 of the 234-5Z building.
H0043	3/4 Ton capacity lever hoist, serial number 663506, located in the tool crib, Room 194 of the 234-5Z building.

Equipment Description:

These are HARRINGTON hoists, Model L4-757.

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Technical Evaluation of Equipment Maintenance
PFP HARRINGTON LEVER HOISTS

2.0 - PREVENTIVE MAINTENANCE EVALUATIONS

2.1 DAILY OR BEFORE USE CHECKS

2.1.1 FUNCTIONAL OPERATION CHECK

Activity - Check that all possible motions are smooth and regular for all speed steps with no hesitations, vibration, binding, weaving, unusual noise, or other irregularity. If chain binds, jumps or is excessively noisy, clean and lubricate with Lubrease Chain and Cable Spray. Check that lever moves freely and without binding, and that the hook stops moving when the lever stops moving.

Evaluation - Per REF's 3.2, DOE-RL-92-36, Section 12.12.4.3, and 3.1 VI 22569, pgs 11-18.

2.1.2 HOOK INSPECTION

Activity - Ensure that hooks/hook latches show no noticeable damage, wear or deformation.

Evaluation - Per REF's 3.2, DOE-RL-92-36, Section 12.12.4.3, and 3.1 VI 22569, pgs 11 & 12.

2.1.3 BRAKE OPERATION

Activity - Ensure that brakes operate smoothly.

Evaluation - Per REF's 3.2, DOE-RL-92-36, Section 12.12.4.3, and 3.1 VI 22569, pgs 14-16.

2.1.4 HOIST CHAINS

Activity - Visually ensure that hoisting chains are in good condition with no bends, cracks or pitting, and hoist chain feeds smoothly into and away from sprockets. Inspect chain for excessive wear or stretching by measuring 5 links in accordance with vendor instructions.

Evaluation - Per REF's 3.2, DOE-RL-92-36, Section 12.12.4.3, and 3.1 VI 22569, pg 12.

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Technical Evaluation of Equipment Maintenance
PFP HARRINGTON LEVER HOISTS

2.1.5 LUBRICANT LEAKAGE

Activity - Ensure that there is no visible leakage of lubricant.

Evaluation - Per REF 3.2, DOE-RL-92-36, Section 12.16.6.

2.1.6 CHAIN REEVING

Activity - Inspect load sheave and replace if damaged or worn. Make sure that the welds in standing links are away from load sheave, and that the chain is not capsized, twisted or kinked.

Evaluation - Per REF 3.1 VI 22569, pg 16.

2.2 WEEKLY CHECKS

2.2.1 CHAIN LUBRICATION

Activity - Lubricate load chain, hook, and safety latch pivot points. Use Lubrease Chain and Cable Spray.

Evaluation - Per REF 3.1 VI 22569, pg 21.

2.3 SEMI-ANNUAL CHECKS

2.3.1 GENERAL INSPECTION

Activity - Inspect the hoist for the following:

- deformed, cracked, or corroded members
- loose or missing bolts or rivets
- cracked or worn sheaves, drums, and load or idler sprockets

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Technical Evaluation of Equipment Maintenance
PFP HARRINGTON LEVER HOISTS

- worn, cracked or distorted parts such as pins, bearings, shafts, gears, rollers, locking and clamping devices

Evaluation - As Per REF's 3.1, VI 22569, pgs 11-18, and 3.2, DOE-RL-92-36, Section 12.12.4.3.

2.3.2 HOOK INSPECTION

Activity - Dye penetrant, magnetic particle or other suitable crack detecting method should be used for this inspection at the discretion of the COG Engineer. Visually inspect for cracks, increased throat openings, twists, damage to hook retaining nuts, collars, or pins, and welds or rivets used to secure retaining members. Check latch engagement and operation to assure latch is not damaged or bent. Hooks that allow the latch to disengage the tip must be replaced. Look for evidence of heat damage. Causes for rejection include:

- 15% or greater increase in the throat opening
- 10 degree or greater twist of the point away from the shank
- 10% or greater wear in the throat section
- 5% or greater elongation of shank

Note: Actual hook size can be found in the initial JCS work package for new installations. An established base line will have been recorded in the user procedure of PISCES for older equipment.

Any hook that is twisted or has excessive throat opening indicates abuse or over-loading of the unit. Other load sustaining components of the hoist should be inspected for damage.

Evaluation - Per REF 3.2, DOE-RL-92-36, Section 5.4.4, and REF 3.1 VI 22569, pgs 11 & 12.

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Technical Evaluation of Equipment Maintenance
PFP HARRINGTON LEVER HOISTS

2.3.3 LOAD CHAIN INSPECTION

Activity - Visually inspect end connections of wire ropes or chains. Check for stiffening or poor hinging of linkage. Look for evidence of heat damage. Causes for rejection include:

- link wear to less than 90% of the original bar diameter
- nicking, cracking, or corrosion of a link that, when ground out to a smooth surface, leaves less than 90% of the original bar diameter

Note: Original bar diameter can be found in the hoist history file.

Evaluation - Per REF 3.2, DOE-RL-92-36, Section 12.14.1

2.3.4 FUNCTIONAL OPERATION

Activity - Check functional operating mechanisms.

Evaluation - Per REF 3.2, DOE-RL-92-36, Section 12.12.4.3.

2.3.5 BRAKE CHECK

Activity - Check brake system parts, pawls, and ratchets. Inspect brake components for worn, glazed, or oil-contaminated friction discs and scoring of the handwheel hub, ratchet, and friction hub. Look for corroded, stretched or broken pawl spring. Ensure free movement of pawl on pawl stud. Apply a thin coat of WD-40 (WD-40 Co.) to the pawl stud before reassembly.

Evaluation - Per REF 3.2, DOE-RL-92-36, Section 12.9.1.

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Technical Evaluation of Equipment Maintenance
PFP HARRINGTON LEVER HOISTS

2.3.6 LUBRICATION

Activity - When the hoist is disassembled for inspection or cleaning the gears should be lubricated using Calcium soap grease or equivalent.

Be sure to thoroughly clean the old grease from the part before re-lubricating.

Evaluation - Per REF 3.2, DOE-RL-92-36, Section 12.16.6, and REF 3.1 VI 22569, pg 20.

2.4 5 YEAR CHECK

2.4.1 LOAD TEST

Activity - The hoist shall be load tested at 125% of its rated capacity. The test load shall be lifted and held for 5 minutes. Raise the load an additional 2 wraps on the load drum and at least 3 feet, for 5 minutes. Lower the load and suspend for an additional 5 minutes. Throughout the procedure, verify that no slippage of more than 1/2 inch occurs. Following the load test, verify that no load bearing part or hook has been damaged.

Evaluation - Per REF 3.2, DOE-RL-92-36, Section 12.17.2.

2.5 ACTIVITIES NOT PERFORMED PER VI RECOMMENDATIONS

None.

2.6 VENDOR RECOMMENDATIONS THAT ARE NOT APPLICABLE

None.

WHC-SD-CP-TEEM-066, REV 0
Technical Evaluation of Equipment Maintenance
PFP HARRINGTON LEVER HOISTS

3.0 - REFERENCES

- 3.1 VI file 22569, dated 3/30/94, titled "*Operation and Safety Instructions for Harrington Cumalong Lever Puller Model L4*," equipment manufacturer - Harrington Hoists Inc.
- 3.2 DOE-RL-92-36, *Hanford Site Hoisting and Rigging Manual*, Westinghouse Hanford Company, latest revision.

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Technical Evaluation of Equipment Maintenance
PFP HARRINGTON LEVER HOISTS

APPENDIX A

EQUIPMENT HISTORY

As a result of an audit performed by Stone & Webster for the Richland Operations Office of the Department of Energy, equipment history files for the cranes and hoists at PFP were given a base start date of April 1, 1991. These files are maintained by the Cognizant Engineer with responsibility for the oversight of system 41B.

WHC-SD-CP-TEEM-066, REV 0
Technical Evaluation of Equipment Maintenance
PFP HARRINGTON LEVER HOISTS

APPENDIX B

NAMEPLATE DATA

The nameplate for these hoists should include the following information:

H0038:	Manufacturer:	Harrington
	Model #:	L4
	S/N:	664007
	Weight:	1 1/2 Ton
	Type:	Lever
H0039:	Manufacturer:	Harrington
	Model #:	L4
	S/N:	664000
	Weight:	1 1/2 Ton
	Type:	Lever
H0040:	Manufacturer:	Harrington
	Model #:	L4
	S/N:	663518
	Weight:	1 Ton
	Type:	Lever
H0041:	Manufacturer:	Harrington
	Model #:	L4
	S/N:	663517
	Weight:	1 Ton
	Type:	Lever
H0042:	Manufacturer:	Harrington
	Model #:	L4
	S/N:	663505
	Weight:	3/4 Ton
	Type:	Lever
H0043:	Manufacturer:	Harrington
	Model #:	L4
	S/N:	663506
	Weight:	3/4 Ton
	Type:	Lever