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Accession #: D195066656

Document #: SD-SNF-CSWD-001

Title/Desc:

105K EAST ION EXCHANGE & CARTRIDGE FILTER RESTART
COMPUTER SOFTWARE DOCUMENTATION

Pages: 11

DEC 11 1995

ENGINEERING DATA TRANSMITTAL

Page 1 of 1
1. EDT 605791

2. To: (Receiving Organization) Distribution	3. From: (Originating Organization) 100 K AREA PROCESS ENGINEERING	4. Related EDT No.: NA
5. Proj./Prog./Dept./Div.: SNF	6. Cog. Engr.: R WHITEHURST	7. Purchase Order No.: NA
8. Originator Remarks: Transmittal of the Computer Software Documentation for the 105 K East Ion Exchange and Cartridge Filter Restart Project		9. Equip./Component No.: NA
		10. System/Bldg./Facility: 105 KE
11. Receiver Remarks:		12. Major Assm. Dwg. No.: NA
		13. Permit/Permit Application No.: NA
		14. Required Response Date: NA

15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Approval Designator	Reason for Trans- mittal	Orig- inator Dispo- sition	Receiv- er Dispo- sition
1	WHC-SD-SNF-CSWD-001		0	105 KE ION EXCHANGE AND CARTRIDGE FILTER RESTART COMPUTER SOFTWARE DOCUMENTATION	Q	1,2	1	

16. KEY			
Approval Designator (F)	Reason for Transmittal (G)		Disposition (H) & (I)
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)	1. Approval 2. Release 3. Information	4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION (See Approval Designator 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.
1,2	2	Cog.Eng. R. WHITEHURST	R3-85	12/11/95							
1,2	2	Cog. Mgr. MJ WIEMERS	X3-85	12/11/95							
1,2	2	QA PJ EDWARDS	A4-79	12/11/95							
		Safety									
		Env.									
1,2	2	DW MEDFORD	X3-74	12/11/95							
1,2	2	DS SCHERMERNHORN	L6-04	12-8-95							

18. Signature of EDT Originator Date 12-8-95	19. Authorized Representative for Receiving Organization Date	20. Cognizant Manager Date 12/11/95	21. DOE APPROVAL (if required) Ctrl. No. ☐ Approved ☐ Approved w/comments ☐ Disapproved w/comments
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105 K EAST ION EXCHANGE AND CARTRIDGE FILTER RESTART COMPUTER SOFTWARE DOCUMENTATION

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Westinghouse Hanford Co., Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-87RL10930

EDT/ECN: 605791 UC: 605
Org Code: 26000 Charge Code: LD043
B&R Code: EW3135040 Total Pages: 8

Key Words: Computer Software Documentation Ion Exchanger Cartridge
Filter Restart

Abstract: COMPUTER SOFTWARE DOCUMENTATION FOR THE CARTRIDGE FILTER
RESTART PROJECT

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Release Approval

12/11/95
Date

Release Stamp

Approved for Public Release

WHC-SD-SNF-CSWD-001

Rev. 0

**105 K East Ion Exchange and Cartridge Filter
Restart Computer Software Documentation.**

Author: DS Schermerhorn
Date: December 8, 1995

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1.0 INTRODUCTION

This document supplies required computer related documentation for the 105 K East Ion Exchange and Cartridge Filter Restart project. Some of the documentation is provided in separate documents and in those cases a cross reference or explanation is provided.

The computer system referenced in this document consists of a simple operator interface in communication with a programmable logic controller (PLC). The system is responsible for displaying various fluid parameters related to the basins operation. The system is responsible for alarming out of specification parameters and activating a small local alarm horn (Sonalert) and a large remote horn (Alarm Horn). *Sonalert is a trademark of Mallory Capacitor Company, Indianapolis, IN. (JES 12/11/95)*

The requirements for this document are located in WHC-CM-3-10 SOFTWARE PRACTICES section SP-3.4 SMALL JOB DEVELOPMENT dated January 31, 1993. The specific outline for this supporting document was obtained from Figure 1 of section 3.4.

2.0 SYSTEM PROJECT MANAGEMENT PLANNING

This section documents the system project management plan for the computer system. Due to the very small scope of the project the project management plan has been kept brief and simple as allowed by SP-3.4 section 5.1.3.

2.1 Project Deliverables

The following products will be deliverable during the implementation phase of the project.

1. Operator Interface Software .. This software consists of required code/objects for providing an interface to the data collected by the PLC. The software will be run under the commercial software suite known as "Wonderware/Intouch". *Intouch is a trademark of Wonderware Inc. (JES 12/11/95)*
2. PLC Software .. This software consists of required code/objects for controlling the PLC CPU. The software is responsible for collecting data from the various instruments used within the KE basin. A specific list of the instruments is given in a separate section.

3. System Documentation .. This documentation consists of the following supporting documents.
 - A. Computer Software Configuration Management Plan (CSCM)
 - B. Computer Software Design Description (CSDD)
 - C. Computer Software Requirements Specification (CSRS)
 - D. Computer Software User Documentation (CSUD)
4. Testing Documentation .. This documentation consists of the following test documents.
 - A. Acceptance Test Procedure (ATP)
 - B. Acceptance Test Report (ATR)

2.2 Software Development Cycle Phases and Reviews

The software will be developed in three phases: design, generation and testing. The design phase will be reviewed by the engineering and operations department. The code generation phase will be reviewed by the system designer and the test phase will be reviewed by independent test personnel (not the system designer) and a member of the QC department.

2.3 Organizational and Individual Responsibilities

The organizational and individual responsibilities are as follows.

1. The engineering department will review and approve the design, testing results and all documentation associated with this project.
2. The system designer will implement the software design and provide the system and testing documentation. The designer will also correct all design deficiencies found during testing, however the basic design will not be altered/enhanced during testing. If alterations/enhancements are identified during testing then such alterations/enhancements will be implemented after testing is completed via separate documentation (i.e. ECN etc.).
3. Testing personnel will perform the testing as specified in the testing documentation. Deficiencies encountered during testing will be reported to the system designer.

4. QC personnel will provide oversight during testing and QA personnel will provide review authority for all documentation.

2.4 Procedures Used

The procedures in WHC-CM-3-10 will be used during the course of the project.

2.5 Change Authority and Status Reporting

The engineering department will have authority to direct a change to the system design or documentation.

The system designer will provide status reports during the software construction and documentation phase in the form of inter office memos.

2.6 Work Tasks

The following tasks will be performed, some of the tasks may be performed in parallel as the need requires.

1. Collect design requirements from the customer.
2. Construct software and software requirements documentation.
3. Initial software review by customer and engineering department.
4. Final software and documentation construction.
5. Final pre-test software and documentation approval.
6. Software testing and deficiency correction.
7. Testing report.
8. Final software approval and associated documentation release.

2.7 Schedules

The following are the schedule durations for this software project.

1. Construct pre-test software and documentation .. 2 months.
2. Test software .. 2 days.
3. Correct deficiencies .. 1 day.
4. Retest deficiencies .. 1 day.
5. Issue test report .. 2 days.
6. Issue final software release 1 week.

3.0 ACCEPTANCE CRITERIA

This section documents the acceptance criteria for the software and documentation deliverables. Some of the acceptance criteria are derived by the limitations imposed by the computer hardware. Pertinent criteria from this list will be re asserted in the ATP.

1. All software documentation must be reviewed and approved by the QA department.
2. All software testing must be witnessed and signed by the QC department.
3. Delivered software will meet all design requirements as presented in the CSRS (WHC-SD-SNF-CSRS-001 105 K East Ion Exchange and Cartridge Filter Restart Computer Software Requirements Specification.)
4. Delivered software will meet the design descriptions as presented in the CSDD (WHC-SD-SNF-CSDD-001 105 K East Ion Exchange and Cartridge Filter Restart Computer Software Design Description.)
5. Delivered software must pass all associated acceptance steps in the acceptance test procedure (WHC-SD-SNF-ATP-012 105 K East Ion Exchange and Cartridge Filter Restart Instrumentation Acceptance Test Procedure).

4.0 SYSTEM REQUIREMENTS SPECIFICATIONS

The requirements specifications are in the document WHC-SD-SNF-CSRS-001 105 K East Ion Exchange and Cartridge Filter Restart Computer Software Requirements Specification. The CSRS also lists the constraints that effect system implementation.

5.0 ALTERNATIVES ANALYSIS

Not required for SMALL JOB DEVELOPMENT per SP-3.4.

6.0 SYSTEM DESIGN DESCRIPTION

The design description is in the document WHC-SD-SNF-CSDD-001 105 K East Ion Exchange and Cartridge Filter Restart Computer Software Design Description.

7.0 SYSTEM USER DOCUMENTATION

The system user documentation is in the document WHC-SD-SNF-CSUD-001 105 K East Ion Exchange and Cartridge Filter Restart Computer Software User Documentation.

8.0 SOFTWARE CONFIGURATION CONTROL

The software configuration control documentation is in the document WHC-SD-SNF-CSCM-001 105 K East Ion Exchange and Cartridge Filter Restart Computer Software Configuration Management Plan.

9.0 VERIFICATION

Requirements verification will be documented by formal review and approval of the CSRS. Design verification will be documented by formal review and approval of the CSDD. Test readiness verification will be documented by formal review and approval of the ATP. Installation verification will be documented by performance of the ATP and by review and approval of the ATR.

10.0 VALIDATION

Validation will be performed by completing the ATP.

11.0 VERIFICATION AND VALIDATION FINAL REPORT

Verification and validation of the final report will be documented by formal review and approval of the ATR.

DISTRIBUTION SHEET

To	From	Page 1 of 1			
Distribution	100 K Area Process Engineering	Date 12/7/95			
Project Title/Work Order		EDT No. 605791			
105 K East Ion Exchange and Cartridge Filter Restart Project		ECN No. NA			
Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
WIEMERS MJ	X3-84	X			
WHITEHURST R	R3-86	X			
SCHERMERHORN DS	L6-04	X			
EDWARDS PJ	A4-79	X			
MEDFORD DW	X3-74	X			
CENTRAL FILES	A3-88	X (ORIG + 2)			
<i>Project Sales</i>	<i>X3-85</i>	X			