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2F AND 2H EVAPORATOR LOOP EVALUATION CLOSURE REPORT

by

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HIGH LEVEL WASTE ENGINEERING

FACILITY ENGINEERING SECTION

WSRC-TR-94-046

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KEYWORDS:

Instrument

Procedure

Calibration

RETENTION:

PERMANENT

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NOT CONTROLLED
EXCLUDED FROM AUTOMATIC
DECLASSIFICATION

CLASSIFICATION:

DATE: 1/28/94
BY: [Signature]

Authorized Derivative Classifier

2-F & 2-H EVAPORATOR LOOP EVALUATION CLOSURE REPORT (U)

BY

W. F. BATES

ISSUED: January 28, 1994

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INTRODUCTION

As a result of the Concentrate Transfer System (CTS) tank ventilation system contamination event (Ref. 1), a task team was formed to evaluate instrument loops and interlocks associated with waste reduction equipment. During the event, a conductivity probe designed to provide an alarm and initiate an interlock failed to respond to the presence of liquid. An investigation revealed that the probe had become disconnected from the loop. The daily functional check of the conductivity probe circuit only tested the circuit continuity from the ventilation unit to the control room and did not actually test the probe. To test the continuity, a test switch was used to simulate the conducting probe. Because the functional check did not test each part of the loop, the test could be satisfactorily completed even though the probe itself was inoperable. The function of the task team was to develop a list of loops and interlocks prioritized by importance and likelihood of similar failure. The team evaluated the associated loop calibration and functional test procedures to verify that they are adequate to ensure loop performance on a periodic frequency. This report documents the evaluation findings and associated actions required prior to startup of the 2F and 2H evaporators.

SUMMARY

Following the CTS contamination event described in Reference 1, a High Level Waste Engineering Action Plan was written to document the engineering activities that are necessary to prevent similar future events (Ref. 2). A task team was formed to complete one of the action plan activities. The activity involved prioritizing a list of instrument loops and interlocks for waste reduction equipment, performing field loop walkdowns when necessary, evaluating loop calibration and functional test procedures, and identifying and initiating any corrective actions. Reference 3 documents the results of this review for the 1H evaporator. Over seventy 2F and 2H evaporator loop verification and calibration procedures were evaluated to ensure that each critical component in each loop is verified to function. The evaluation resulted in 26 procedure changes to improve the completeness of the loop verification. One loop procedure was deemed necessary to complete prior to 2H evaporator startup after incorporating procedure changes due to the nature of the loop and the evaluation findings. All applicable conductivity probe and continuous air monitor (CAM) procedures will be completed prior to 2H evaporator startup based on the 1H evaporator review (Ref. 3). All loop procedures required for 2F evaporator startup per Reference 4 will have the new procedure changes incorporated and completed prior to startup.

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DISCUSSION

Reference 5 documents the methodology used by the loop evaluation team to prioritize and determine the loops under evaluation, and define responsibilities for the associated parts of the evaluation plan. The specific loops included in the review were determined by the review team and the system engineers responsible for the 2F and 2H evaporators. This report closes the loop evaluation plan for the 2F and 2H evaporators.

A breakdown of the types of instrument loops evaluated is as follows:

<u>Type</u>	<u>Number of 2F loops</u>	<u>Number of 2H loops</u>
Conductivity probes	8	10
Bubblers/dip tubes	17	13
Radiation monitors	5	5
Thermocouples/RTDs	3	4
Air activity monitors	1	2
Other (transmitters)	0	2
	<hr/> 34	<hr/> 36

Note: Additional loops for air activity and radiation monitors may exist. However, they are checked with the same Maintenance and/or Health Protection procedures as those specifically included in the evaluation.

Evaluation Results

Attachments 1 and 2 document the results of each loop and associated procedure reviews for the 2F and 2H evaporators respectively. Review team members and a design classification key are included in Table 1. Some of the loops and procedures were considered satisfactory and required no changes. Some of the loops and procedures had areas where the procedures could be improved or made more thorough, and some drawing discrepancies were found. Approximately 32 procedures were reviewed. Three procedures required no changes because they were revised per Reference 3. All the remaining procedures reviewed were revised or Procedure Change Requests (PCRs) were generated to make the procedures more thorough. These changes affected 25 existing procedures through Immediate Procedure Changes (IPCs) or Procedure Change Requests (PCRs). New procedures are currently being developed to

support one of the 2F evaporator temperature monitoring loops and for the 2F and 2H evaporator condensate gamma monitors.

The following is a list of the findings and improvement procedure changes from the procedure reviews. Those items found most frequently are listed first.

- Bubbler rotometer flows were not verified or set. Procedure changes were initiated to verify flow.
- Specific alarms and/or interlocks were not all specified in all procedures. Maintenance personnel or Operations personnel are expected to understand the system and know which alarms to expect from each loop under test. Specific alarms and/or interlocks will be specified in the work instructions or separate loop specific procedures will be generated.
- Post-maintenance "reasonableness checks" were initiated through procedure changes to verify that when a component is reconnected to the loop, following simulated process variable changes, the output device is reading a value close to the Operations expected value for the given process conditions. In many cases, this will be a judgment based on operations knowledge that the parameters are reasonable for the current plant configuration. This type of check is done in cases where it is difficult or undesirable to provide a signal to the sensor to verify sensor operability. One loop procedure was changed to provide a functional test of a pump interlock.
- Numerous PCRs were generated containing global improvements including the use of two directional, nine point calibration checks to quantify and minimize hysteresis effects. Similarly, many PCRs included a change from use of installed process instrumentation (IPI) to use of portable measurement and test equipment (M&TE) for taking acceptance criteria readings. On several procedures, PCRs included changes to the acceptable test signal input range to extend it so that it encompasses the allowable actuation range for the associated interlock or alarm.
- Several of the dip tube procedures did not perform a leak check of accessible tubing and connections. This check was added as a post maintenance check.
- Independent or peer verification of certain precise manipulations (valve manipulations, lifting/landing leads, etc.) was recommended in many Procedure Change Requests. If adequate post-maintenance testing could not easily be performed, the verifications will provide additional

confidence that the loops are returned to normal. When electrical jumpers are required, alligator clips are recommended to reduce the probability of error when lifting and landing leads. The inspection requirement may be waived if a post-maintenance test can be developed during the procedure revision process.

Some of the procedures reviewed did not perform an actual post-maintenance test of the entire loop. An example of this is a bubbler used for level indication. The tubing may be removed or isolated and the interlocks and alarms tested using a simulated input. When the test input device is removed, the inaccessible parts of the dip tubes may not be tested by filling a vessel with liquid to detect a level change. In many such cases, the procedures were considered acceptable without such a post-maintenance test based on the consequence of instrument loop failure. If a loop failure results in possible overflow into a contained vessel with independent level detection instrumentation, a complicated post-maintenance test was generally not deemed necessary. If the consequence of failure has the potential for environmental release or expensive equipment damage, the loops were deemed to require more rigorous post-maintenance testing.

The system engineers will review procedure revisions against the associated PCRs generated in the review documented in Attachment 1. In addition to the new procedure reviews, system engineers will review completed work packages for the loops which are checked prior to 2F and 2H evaporator startups. These reviews will ensure that the significant PCRs have been incorporated or that changes were made to the procedures which meet the intent of the PCRs and provide maximum reasonable confidence in loop operability following completion of the procedures.

2F Evaporator Startup Scope

The list of loops evaluated and the results of the evaluations for the 2F evaporator loops are documented in Attachment 1. The loops which are required to be completed within frequency prior to startup of the 2F evaporator are documented in Reference 4. All loops required for startup which are impacted by a PCR must have the revisions incorporated prior to use to meet the startup requirements. Many of these procedures will be completed as work instructions used for validation of the Maintenance procedures. These PCRs and loop preventive maintenance packages are being tracked as part of the 2F evaporator startup schedule. PCRs for procedures which are not required for startup will be incorporated at the next revision of the procedure.

2H Evaporator Startup Scope

Following the completion of the evaluations documented in Attachment 2, a meeting was held with the 2H evaporator system engineer and Operations, Procedures, and Maintenance personnel to determine which loops must be functionally tested prior to 2H evaporator startup based on the findings of the procedure reviews for 2H and those completed for the 1H evaporator per Reference 3. If the findings were significant enough to raise concerns over the operability of the loops and if the loops are critical to safe evaporator operation, the loop procedures were deemed necessary to be run prior to startup with new procedure changes incorporated. If the failure consequence of a loop was considered to have low safety risk or if the procedure review identified no significant procedure change requirements, the loop procedures were not deemed necessary for evaporator startup.

One loop check procedure was considered necessary to complete with new procedure changes incorporated prior to startup. An additional ten conductivity probe loops and two continuous air monitor (CAM) loops were considered necessary to complete with changes documented in Reference 3 prior to startup. Attachment 3 documents the review and concurrence by High Level Waste Engineering, Operations, Procedures and Maintenance on which loops must be functionally checked prior to startup. These 13 loops will be tracked by Maintenance as part of the 2H startup schedule. PCRs for procedures which are not required for startup will be incorporated at the next revision of the procedure.

Remaining Loops

The Maintenance Baseline Program (MBP) procedure WME-MC-1-4 (Manual SW7) has been revised by an Immediate Procedure Change (IPC) to address MTS-93315. This change added a note stating that "if a functional test is recommended, the procedure must test all components from the source element to the output device." This change in addition to the heightened sensitivity of the HLWE system engineers to the issues discovered in the task team loop evaluations is considered adequate for future non-Waste Reduction system loop verification and calibration procedure reviews. Programmatic procedure improvement methodology is currently being considered per Reference 6 which will provide improved consistency in loop verification and calibration practices.

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ACTIONS

The following actions in addition to those documented in Reference 3 will provide improvements to close the issues associated with the evaporator loop procedure review:

1. Have HLWE consider a high level alarm installation to alarm when the CRC pump starts in loop 1207. (HLWE, MTS-93549)
2. Have HLWE evaluate loop 1185 (2H Evaporator Foam Level) and determine if the loop number 1185 is correct or requires a procedure change to WMM 17024 or a design change to modify drawing W701062 to reflect the correct loop number. (HLWE, MTS-93550)
3. Have HLWE review drawing M-M6-H-8339 and determine if all interlocks for loops 1177DT and 1178LT are adequately reflected and issue a design change if necessary. (HLWE, MTS-93551)

REFERENCES

1. Waste Management Occurrence Report, Concentrate Transfer System (CTS) Tank Ventilation System, SRS-HTANK-93-0025, May 23, 1993.
2. Monahon, T. M., Cathey, S. S., High Level Waste Engineering Action Plan, WER-HLE-931087, June 9, 1993.
3. Bates, W. F., 1-H Evaporator Loop Evaluation Closure Report (U), WSRC-TR-93-455, Rev. 0, September 13, 1993.
4. 2F Evaporator Manual (U), Manual SW10.1-2F-EVAP, Attachment 6.2, Rev. 3, DRAFT.
5. Bates, W. F., Waste Reduction Loop Check Verification Plan (U), WSRC-TR-93-361, August 9, 1993.
6. Bates, W. F., Identification of Maintenance Procedures and Review Methods (U), HLW-HLE-94-0013, January 14, 1994.

TABLE 1

REVIEW TEAM MEMBERS & DESIGN CLASSIFICATION KEY
FOR ATTACHMENTS 1 & 2

<u>INITIALS</u>	<u>ENGINEER</u>	<u>ACRONYM</u>	<u>KEY</u>
CAR	C. A. ROACH	CP	CRITICAL PROTECTION
SU	S. ULLAH	PS	PRODUCTION SUPPORT
MJR	M. J. REA	GS	GENERAL SERVICE
TDP	T. D. PHILLIPS	G	"GENERIC" (Ref. 5)
SMP	S. M. PATTISON		
JEG	J. E. GRIFFITHS		
EMT	E. M. TSHISHIKU		

WASTE REDUCTION LOOP EVALUATIONS (2F) -- 1/20/94

LOOP	DESCRIPTION	DESIGN CLASS	PROC	PROCEDURES ADEQUATE (Y/N) IF NOT, JUSTIFICATION OR CORRECTIVE ACTION	REVIEW BY
0150	EVAPORATOR FEED PUMP CONTAINMENT HOUSE VAMP	CP	5Q1.7: 103, 103A(U) WMM 14300	NO, TROUBLE ALARMS FOR VAMPS ARE NOT TESTED UNDER THESE HP PROCEDURES. HOWEVER, CONFIDENCE THAT THE VAMPS ARE NOT FAILED IS INCREASED BY USE OF ROUNDSHEETS WHICH SHOULD IDENTIFY EXTREMELY LOW READINGS OR FAILURES. WMM 14300 IS BEING REVISED TO INCLUDE A TEST OF HIGH RADIATION & FAILURE ALARM CIRCUITRY BY SIGNAL INJECTION. TRACKING/TRENDING ABILITY NOW EXISTS.	CAR
0556	EVAPORATOR POT SPECIFIC GRAVITY (SECONDARY)	PS G	HLWM 17038	NO, PCR WRITTEN TO REQUIRE A 9 POINT CALIBRATION CHECK & REASONABLENESS CHECK OF INDICATIONS AFTER RETURN TO NORMAL. REF. M-M6-F-3025, W701091, W704066	CAR
0576	EVAPORATOR CONDENSER VENT TEMPERATURE (PRIMARY)	GS G	NONE	THIS LOOP IS CURRENTLY BEING MODIFIED UNDER INDIRECT WORK REQUEST #KQM23. PROCEDURAL CHECKOUT OF THIS MODIFICATION WILL BE COVERED UNDER THIS PACKAGE. REF. M-M6-F-3026	CAR
0650	FLASH TANK LEVEL (DIP TUBE)	GS G	HLWM 17047	NO, PCR TO SET UP CONDITIONS FOR RUNNING STEAM CONDENSATE PUMPS FOR INTERLOCK CHECK, VERIFICATION OF ROTOMETER FLOW, 9 POINT CALIBRATION CHECK, AND REASONABLENESS CHECK FOLLOWING RETURN TO NORMAL. REF. M-M6-F-2929, W702240, W700673, W704226	CAR
0662	GV HOUSE VAMPS	CP	5Q1.7: 103, 103A(U) WMM 14300	NO, TROUBLE ALARMS FOR VAMPS ARE NOT TESTED UNDER THESE HP PROCEDURES. HOWEVER, CONFIDENCE THAT THE VAMPS ARE NOT FAILED IS INCREASED BY USE OF ROUNDSHEETS WHICH SHOULD IDENTIFY EXTREMELY LOW READINGS OR FAILURES. WMM 14300 IS BEING REVISED TO INCLUDE A TEST OF HIGH RADIATION & FAILURE ALARM CIRCUITRY BY SIGNAL INJECTION. TRACKING/TRENDING ABILITY NOW EXISTS.	CAR

ATTACHMENT 1

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LOOP	DESCRIPTION	DESIGN CLASS	PROC	PROCEDURES ADEQUATE (Y/N) IF NOT, JUSTIFICATION OR CORRECTIVE ACTION	REVIEW BY
0664	OVERHEADS RECEIVER CELL (GAMMA MONITORS (VAMPS)	CP	5Q1.7 103, 103A(U) WMM 14300	NO, TROUBLE ALARMS FOR VAMPS ARE NOT TESTED UNDER THESE HP PROCEDURES. HOWEVER, CONFIDENCE THAT THE VAMPS ARE NOT FAILED IS INCREASED BY USE OF ROUNDSHEETS WHICH SHOULD IDENTIFY EXTREMELY LOW READINGS OR FAILURES. WMM 14300 IS BEING REVISED TO INCLUDE A TEST OF HIGH RADIATION & FAILURE ALARM CIRCUITRY BY SIGNAL INJECTION. TRACKING/TRENDING ABILITY NOW EXISTS.	CAR
0665	EVAPORATOR UPPER CATWALK VAMP	CP	5Q1.7 103, 103A(U) WMM 14300	NO, TROUBLE ALARMS FOR VAMPS ARE NOT TESTED UNDER THESE HP PROCEDURES. HOWEVER, CONFIDENCE THAT THE VAMPS ARE NOT FAILED IS INCREASED BY USE OF ROUNDSHEETS WHICH SHOULD IDENTIFY EXTREMELY LOW READINGS OR FAILURES. WMM 14300 IS BEING REVISED TO INCLUDE A TEST OF HIGH RADIATION & FAILURE ALARM CIRCUITRY BY SIGNAL INJECTION. TRACKING/TRENDING ABILITY NOW EXISTS.	CAR
(2022 NEW)	STEAM CONDENSATE GAMMA MONITOR	CP-G	WMM 17137, 14471, 14472	NO, LOOP VERIFICATION, ELECTRONIC, CALIBRATION, CONFIGURATION SETUP, AND SOLID SOURCE CALIBRATION PROCEDURES ARE BEING REVISED AND/OR DEVELOPED VIA NEW PCRs. THIS PROCEDURE DEVELOPMENT AND FIELD WORK IS BEING TRACKED ON THE 2F EVAPORATOR STARTUP SCHEDULE. REF. M-M6-F-2929	EMT
0554	EVAPORATOR CELL EXHAUST CAM BLOWER FLOW (DWYER PS)	PS-G	5Q1.5: 314, WMM 14305, 14376	YES, WMM 14305 WAS REVISED DURING 1H EVAP. REVIEW TO INCLUDE INTERLOCK CHECK FOR CTS AND 2H (FUTURE). HIGH ACTIVITY & LOW COUNT SETPOINTS ARE MADE WITH HP PROCEDURES. WMM 14376 WAS REVISED PER 1H REVIEW TO ADD LEAK & REASONABLENESS CHECK WHEN RETURNED TO SERVICE. NEW PCR WRITTEN TO IMPROVE SWITCH ACTUATION STEPS. REF. M-M6-F-2985	EMT
0552	EVAPORATOR POT LEVEL	PS-G	HLWM 17037	NO, SAME AS LOOP 0551. REF. M-M6-F-3025	JEG

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LOOP	DESCRIPTION	DESIGN CLASS	PROC	PROCEDURES ADEQUATE (Y/N) IF NOT, JUSTIFICATION OR CORRECTIVE ACTION	REVIEW BY
0603 111	NORTH OVERHEADS TK LEVEL (WEE TK 8 DIP TUBES)	GS G	WMM 17032	NO, REVISION WAS CHANGED TO ADD 9 POINT CAL. CHECK, TO REQUIRE ROTOMETER CHECKS, AND REASONABLENESS CHECK FOLLOWING LOOP VERIFICATION COMPLETION. TANK LEVELS ARE PERIODICALLY (HOURLY) READ BY OPERATIONS. OVERFLOW RUNS TO THE OVERHEADS CELL SUMP WHICH HAS TWO LEVEL INSTRUMENTS. REF. M-M6-F-3028	JEG
0603 112	SOUTH OVERHEADS TK LEVEL (WEE TK 9 DIP TUBES)	GS G	WMM 17033	NO, REVISION WAS CHANGED TO ADD 9 POINT CAL. CHECK, TO REQUIRE ROTOMETER CHECKS, AND REASONABLENESS CHECK FOLLOWING LOOP VERIFICATION COMPLETION. TANK LEVELS ARE PERIODICALLY (HOURLY) READ BY OPERATIONS. OVERFLOW RUNS TO THE OVERHEADS CELL SUMP WHICH HAS TWO LEVEL INSTRUMENTS. REF. M-M6-F-3028	JEG
	CRC CHARGING HOPPER CONDUCTIVITY PROBE	PS G	WMM 14355(A)	YES, WMM 14355 WAS REVISED DURING 1H EVAPORATOR REVIEWS TO IDENTIFY TYPE OF CP AND REPLACEMENT WITH 2-WIRE CPs & ADDITIONAL TESTING OF WIRING CONFIGURATION. NO ADDITIONAL CHANGES ARE REQUIRED.	JEG/ SMP
0155	EVAPORATOR FEED PUMP RISER CONDUCTIVITY PROBE	PS G	WMM 14355(A)	YES, WMM 14355 WAS REVISED DURING 1H EVAPORATOR REVIEWS TO IDENTIFY TYPE OF CP AND REPLACEMENT WITH 2-WIRE CPs & ADDITIONAL TESTING OF WIRING CONFIGURATION. NO ADDITIONAL CHANGES ARE REQUIRED	JEG/ SMP
0581	CRC PUMP TANK HIGH LEVEL CONDUCTIVITY PROBE	GS G	WMM 14355(A)	YES, WMM 14355 WAS REVISED DURING 1H EVAPORATOR REVIEWS TO IDENTIFY TYPE OF CP AND REPLACEMENT WITH 2-WIRE CPs & ADDITIONAL TESTING OF WIRING CONFIGURATION. NO ADDITIONAL CHANGES ARE REQUIRED REF. M-M6-F-3026	JEG/ SMP

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LOOP	DESCRIPTION	DESIGN CLASS	PROC	PROCEDURES ADEQUATE (Y/N) IF NOT, JUSTIFICATION OR CORRECTIVE ACTION	REVIEW BY
0612	OVERHEADS RECEIVER CELL SUMP LEVEL CONDUCTIVITY PROBE	GS G	WMM 14355(A)	YES, WMM 14355 WAS REVISED DURING 1H EVAPORATOR REVIEWS TO IDENTIFY TYPE OF CP AND REPLACEMENT WITH 2 WIRE CPs & ADDITIONAL TESTING OF WIRING CONFIGURATION. NO ADDITIONAL CHANGES ARE REQUIRED	JEG/ SMP
0690	EVAPORATOR CELL UNDERLINER CONDUCTIVITY PROBE	PS G	WMM 14355(A)	YES, WMM 14355 WAS REVISED DURING 1H EVAPORATOR REVIEWS TO IDENTIFY TYPE OF CP AND REPLACEMENT WITH 2 WIRE CPs & ADDITIONAL TESTING OF WIRING CONFIGURATION. NO ADDITIONAL CHANGES ARE REQUIRED. REF. M-M6-F-3024	JEG/ SMP
0692	EVAPORATOR CELL SUMP LEVEL CONDUCTIVITY PROBE	PS G	WMM 14355(A)	YES, WMM 14355 WAS REVISED DURING 1H EVAPORATOR REVIEWS TO IDENTIFY TYPE OF CP AND REPLACEMENT WITH 2 WIRE CPs & ADDITIONAL TESTING OF WIRING CONFIGURATION. NO ADDITIONAL CHANGES ARE REQUIRED. REF. M-M6-F-2024	JEG/ SMP
	TK26 FEED PUMP RISER R2 LEAK DETECTION PROBE	CP	WMM 14355(A)	YES, WMM 14355 WAS REVISED DURING 1H EVAPORATOR REVIEWS TO IDENTIFY TYPE OF CP AND REPLACEMENT WITH 2 WIRE CPs & ADDITIONAL TESTING OF WIRING CONFIGURATION. NO ADDITIONAL CHANGES ARE REQUIRED.	SU
2034 (NEW)	GDL BFV TEMPERATURE (ALL TKS TYPE J T/Cs)	GS G	HLWM 14906 (A,B,C)	YES, PCR WRITTEN FOR MINOR FORMAT CHANGES ONLY IN THE TESTING SECTION. REF. M M6 F 3027, 3030, 3031, 3032, 3033	SU

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LOOP	DESCRIPTION	DESIGN CLASS	PROC	PROCEDURES ADEQUATE (Y/N)	REVIEW BY
				IF NOT, JUSTIFICATION OR CORRECTIVE ACTION	
0030 (NEW)	CRC VENT HIGH FLOW CONDUCTIVITY PROBE	GS-G	HILWM 14355(A)	YES, WMM 14355 WAS REVISED DURING 1H EVAPORATOR REVIEWS TO IDENTIFY TYPE OF CP AND REPLACEMENT WITH 2 WIRE CPs & ADDITIONAL TESTING OF WIRING CONFIGURATION. NO ADDITIONAL CHANGES ARE REQUIRED. REF. M M6 F 3027	SJ
0122	TK25 GDL BFV LEAK DETECTION (DIP TUBES & SWITCH)	PS-G	WMM 14376	YES, WMM 14376 WAS REVISED PER 1H REVIEW TO ADD LEAK & REASONABLENESS CHECK WHEN RETURNED TO SERVICE. PEER VERIFICATION (PV) WAS ALSO ADDED FOR INSTALLATION STEPS. NEW PCR WRITTEN TO IMPROVE SWITCH ACTUATION STEPS.	SJ
0176	TK26 GDL BFV LEAK DETECTION (DIP TUBE & DWYER PS)	PS-G	WMM 14376	YES, WMM 14376 WAS REVISED PER 1H REVIEW TO ADD LEAK & REASONABLENESS CHECK WHEN RETURNED TO SERVICE. PEER VERIFICATION (PV) WAS ALSO ADDED FOR INSTALLATION STEPS. NEW PCR WRITTEN TO IMPROVE SWITCH ACTUATION STEPS.	SJ
0220	TK27 BFV RISER LEAK DETECTION (DIP TUBE & DWYER PS)	PS-G	WMM 14376	YES, WMM 14376 WAS REVISED PER 1H REVIEW TO ADD LEAK & REASONABLENESS CHECK WHEN RETURNED TO SERVICE. PEER VERIFICATION (PV) WAS ALSO ADDED FOR INSTALLATION STEPS. NEW PCR WRITTEN TO IMPROVE SWITCH ACTUATION STEPS.	SJ
0270	TK28 GDL BFV LEAK DETECTION (DIP TUBE & DWYER PS)	PS-G	WMM 14376	YES, WMM 14376 WAS REVISED PER 1H REVIEW TO ADD LEAK & REASONABLENESS CHECK WHEN RETURNED TO SERVICE. PEER VERIFICATION (PV) WAS ALSO ADDED FOR INSTALLATION STEPS. NEW PCR WRITTEN TO IMPROVE SWITCH ACTUATION STEPS.	SJ

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LOOP	DESCRIPTION	DESIGN CLASS	PROC	PROCEDURES ADEQUATE (Y/N) IF NOT, JUSTIFICATION OR CORRECTIVE ACTION	REVIEW BY
0551	EVAPORATOR POT SPECIFIC GRAVITY PRIMARY)	PS G	HLWM 17037	NO, PCR TO ADD COMPONENT ID, PEER VERIFICATION FOR LIFTED/LANDED SOL VALVE LEADS, VERIFY ROTOMETER FLOW, ADD 9 POINT CALIBRATION CHECK, AND REASONABLENESS CHECK FOLLOWING RETURN TO NORMAL. REF. M-M6 F 3025, W701091, W704226	SJ
0553	EVAPORATOR POT PRESSURE & FOAM LEVEL LOOPS (DIP TUBES)	PS G	WMM 17029 & 17025	NO, PCR TO 17029 TO ADD REASONABLENESS CHECK WHEN COMPLETE, VERIFY ROTOMETER FLOW, PEER VERIFICATION FOR LIFTED/LANDED LEADS, 9 POINT CHECK, AND RECOMMEND ALLIGATOR CLIPS FOR JUMPERS. PCR 17025 FOR LIFTED/LANDED PV, 9 PT CHECK, ROTOMETER FLOW, & REASONABLENESS CHECK & USE OF M&TE FOR ACC. CRITERIA. REF. M-M6-F-3025, W701091, W704226	SJ
0555	EVAPORATOR POT TEMPERATURE	CP	HLWM 17028	NO, PCR TO ADD PEER VERIFICATION (PV) AFTER LIFTING/LANDING SOLENOID VALVE LEADS, SPECIFY COMPONENT & ALARM ID, 9 POINT CHECK, USE OF M&TE FOR ACCEPTANCE CRITERIA (VS. IPI), AND REASONABLENESS CHECK WHEN COMPLETE. REF. M-M6-F-3025, W701091, W704226	SJ
0601	OVERHEADS RECEIVER CELL SUMP LEVEL DIP TUBES	GS G	HLWM 17040	NO, PCR WRITTEN TO ADD ROTOMETER FLOW VERIFICATION, 9 POINT CALIBRATION, USE OF M&TE (VS. IPI) FOR ACC. CRITERIA, AND REASONABLENESS CHECK OF INDICATIONS FOLLOWING RETURN TO NORMAL. REF. M-M6-F-3029, W702240, W701230, W704226, W701069	SJ
0691	EVAPORATOR CELL SUMP LEVEL DIP TUBES	GS G	HLWM 17039	NO, PCR TO ADD COMPONENT ID, USE M&TE (VS. IPI) FOR ACC. CRITERIA, VERIFY ROTOMETER FLOW, ADD 9 POINT CALIBRATION CHECK, AND REASONABLENESS CHECK FOLLOWING RETURN TO NORMAL. REF. M-M6-F-3024, W702240, W701230, W701069	SJ

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LOOP	DESCRIPTION	DESIGN CLASS	PROC	PROCEDURES ADEQUATE (Y/N)	REVIEW BY
				IF NOT, JUSTIFICATION OR CORRECTIVE ACTION	
1017	TK44 GDL BFV LEAK DETECTION (DIP TUBE WITH DWYER PS)	PS G	WMM 14376	YES, WMM 14376 WAS REVISED PER 1H REVIEW TO ADD LEAK & REASONABLENESS CHECK WHEN RETURNED TO SERVICE. PEER VERIFICATION (PV) WAS ALSO ADDED FOR INSTALLATION STEPS. NEW PCR WRITTEN TO IMPROVE SWITCH ACTUATION STEPS.	SJ
1065	TK45 GDL BFV LEAK DETECTION (DIP TUBE WITH DWYER PS)	PS G	WMM 14376	YES, WMM 14376 WAS REVISED PER 1H REVIEW TO ADD LEAK & REASONABLENESS CHECK WHEN RETURNED TO SERVICE. PEER VERIFICATION (PV) WAS ALSO ADDED FOR INSTALLATION STEPS. NEW PCR WRITTEN TO IMPROVE SWITCH ACTUATION STEPS.	SJ
1115	TK46 GDL BFV LEAK DETECTION (DIP TUBE WITH DWYER PS)	PS-G	WMM 14376	YES, WMM 14376 WAS REVISED PER 1H REVIEW TO ADD LEAK & REASONABLENESS CHECK WHEN RETURNED TO SERVICE. PEER VERIFICATION (PV) WAS ALSO ADDED FOR INSTALLATION STEPS. NEW PCR WRITTEN TO IMPROVE SWITCH ACTUATION STEPS.	SJ
1165	TK47 GDL BFV LEAK DETECTION (DIP TUBE WITH DWYER PS)	PS-G	WMM 14376	YES, WMM 14376 WAS REVISED PER 1H REVIEW TO ADD LEAK & REASONABLENESS CHECK WHEN RETURNED TO SERVICE. PEER VERIFICATION (PV) WAS ALSO ADDED FOR INSTALLATION STEPS. NEW PCR WRITTEN TO IMPROVE SWITCH ACTUATION STEPS.	SJ

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WASTE REDUCTION LOOP EVALUATIONS (2H) -- 1/20/94

LOOP	DESCRIPTION	DESIGN CLASS	PROC	PROCEDURES ADEQUATE (Y/N) IF NOT, JUSTIFICATION OR CORRECTIVE ACTION	REVIEW BY
	GANG VALVE HOUSE RAD MONITORS (VAMP)	CP-G	5Q1.7: 103, 103A(U) HLWM 14300	NO, TROUBLE ALARMS FOR VAMPS ARE NOT TESTED PER THESE HP PROCEDURES. HOWEVER, CONFIDENCE THAT THESE VAMPS ARE NOT FAILED IS INCREASED BY USE OF ROUNDSHEETS WHICH SHOULD IDENTIFY EXTREMELY LOW READINGS OR FAILURES. WMM 14300 IS BEING REVISED TO INCLUDE A SIGNAL INJECTION TEST OF THE HIGH & FAILURE ALARM CIRCUITS. TRACKING & TRENDING WILL NOW BE FEASIBLE VIA DATASHEETS.	CAR
	UPPER CATWALK RAD MONITORS (VAMP)	CP-G	5Q1.7: 103, 103A(U) HLWM 14300	NO, TROUBLE ALARMS FOR VAMPS ARE NOT TESTED PER THESE HP PROCEDURES. HOWEVER, CONFIDENCE THAT THESE VAMPS ARE NOT FAILED IS INCREASED BY USE OF ROUNDSHEETS WHICH SHOULD IDENTIFY EXTREMELY LOW READINGS OR FAILURES. WMM 14300 IS BEING REVISED TO INCLUDE A SIGNAL INJECTION TEST OF THE HIGH & FAILURE ALARM CIRCUITS. TRACKING & TRENDING WILL NOW BE FEASIBLE VIA DATASHEETS.	CAR
	OVERHEADS CELL RAD MONITORS (VAMP)	CP-G	5Q1.7: 103, 103A(U) HLWM 14300	NO, TROUBLE ALARMS FOR VAMPS ARE NOT TESTED PER THESE HP PROCEDURES. HOWEVER, CONFIDENCE THAT THESE VAMPS ARE NOT FAILED IS INCREASED BY USE OF ROUNDSHEETS WHICH SHOULD IDENTIFY EXTREMELY LOW READINGS OR FAILURES. WMM 14300 IS BEING REVISED TO INCLUDE A SIGNAL INJECTION TEST OF THE HIGH & FAILURE ALARM CIRCUITS. TRACKING & TRENDING WILL NOW BE FEASIBLE VIA DATASHEETS.	CAR
	FEED PUMP CONTAINMENT HOUSE RAD MONITORS (VAMP)	CP-G	5Q1.7: 103, 103A(U) HLWM 14300	NO, TROUBLE ALARMS FOR VAMPS ARE NOT TESTED PER THESE HP PROCEDURES. HOWEVER, CONFIDENCE THAT THESE VAMPS ARE NOT FAILED IS INCREASED BY USE OF ROUNDSHEETS WHICH SHOULD IDENTIFY EXTREMELY LOW READINGS OR FAILURES. WMM 14300 IS BEING REVISED TO INCLUDE A SIGNAL INJECTION TEST OF THE HIGH & FAILURE ALARM CIRCUITS. TRACKING & TRENDING WILL NOW BE FEASIBLE VIA DATASHEETS.	CAR
	TANK 38 BFV CONT. HOUSE RAD MONITORS (VAMP)	CP-G	5Q1.7: 103, 103A(U) HLWM 14300	NO, TROUBLE ALARMS FOR VAMPS ARE NOT TESTED PER THESE HP PROCEDURES. HOWEVER, CONFIDENCE THAT THESE VAMPS ARE NOT FAILED IS INCREASED BY USE OF ROUNDSHEETS WHICH SHOULD IDENTIFY EXTREMELY LOW READINGS OR FAILURES. WMM 14300 IS BEING REVISED TO INCLUDE A SIGNAL INJECTION TEST OF THE HIGH & FAILURE ALARM CIRCUITS. TRACKING & TRENDING WILL NOW BE FEASIBLE VIA DATASHEETS.	CAR

ATTACHMENT 2

WASTE REDUCTION LOOP EVALUATIONS (2H) -- 1/20/94

LOOP	DESCRIPTION	DESIGN CLASS	PROC	PROCEDURES ADEQUATE (Y/N) IF NOT, JUSTIFICATION OR CORRECTIVE ACTION	REVIEW BY
	CRC PUMP TANK CP	GS G	HLWM 14355	YES, WMM 14355 WAS REVISED DURING 1H EVAPORATOR REVIEWS TO IDENTIFY TYPE OF CP AND INITIATE REPLACEMENT WITH 2-WIRE CPs & ADDITIONAL TESTING OF WIRING CONFIGURATION. NO ADDITIONAL CHANGES ARE REQUIRED.	MJR/ SMP
	CRC HOPPER VENT CP	GS G	HLWM 14355	YES, WMM 14355 WAS REVISED DURING 1H EVAPORATOR REVIEWS TO IDENTIFY TYPE OF CP AND INITIATE REPLACEMENT WITH 2-WIRE CPs & ADDITIONAL TESTING OF WIRING CONFIGURATION. NO ADDITIONAL CHANGES ARE REQUIRED.	MJR/ SMP
616	TK38 GDL LDB CP (LDB #1)	PS G	HLWM 14355	YES, WMM 14355 WAS REVISED DURING 1H EVAPORATOR REVIEWS TO IDENTIFY TYPE OF CP AND INITIATE REPLACEMENT WITH 2-WIRE CPs & ADDITIONAL TESTING OF WIRING CONFIGURATION. NO ADDITIONAL CHANGES ARE REQUIRED.	MJR/ SMP
1065	TK43 GDL LDB CP (LDB #4)	PS G	HLWM 14355	YES, WMM 14355 WAS REVISED DURING 1H EVAPORATOR REVIEWS TO IDENTIFY TYPE OF CP AND INITIATE REPLACEMENT WITH 2-WIRE CPs & ADDITIONAL TESTING OF WIRING CONFIGURATION. NO ADDITIONAL CHANGES ARE REQUIRED.	MJR/ SMP
1066	FEED PUMP RISER CP	PS G	HLWM 14355	YES, WMM 14355 WAS REVISED DURING 1H EVAPORATOR REVIEWS TO IDENTIFY TYPE OF CP AND INITIATE REPLACEMENT WITH 2-WIRE CPs & ADDITIONAL TESTING OF WIRING CONFIGURATION. NO ADDITIONAL CHANGES ARE REQUIRED.	MJR/ SMP

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WASTE REDUCTION LOOP EVALUATIONS (2H) -- 1/20/94

LOOP	DESCRIPTION	DESIGN CLASS	PROC	PROCEDURES ADEQUATE (Y/N) IF NOT, JUSTIFICATION OR CORRECTIVE ACTION	REVIEW BY
1083	FEED LINE LDB CP	PS G	HLWM 14355	YES, WMM 14355 WAS REVISED DURING 1H EVAPORATOR REVIEWS TO IDENTIFY TYPE OF CP AND INITIATE REPLACEMENT WITH 2 WIRE CPs & ADDITIONAL TESTING OF WIRING CONFIGURATION. NO ADDITIONAL CHANGES ARE REQUIRED.	MJR/ SMP
1237	OVERHEADS CELL SUMP CP	GS G	HLWM 14355	YES, WMM 14355 WAS REVISED DURING 1H EVAPORATOR REVIEWS TO IDENTIFY TYPE OF CP AND INITIATE REPLACEMENT WITH 2 WIRE CPs & ADDITIONAL TESTING OF WIRING CONFIGURATION. NO ADDITIONAL CHANGES ARE REQUIRED.	MJR/ SMP
1315	EVAPORATOR CELL UNDERLINER SUMP CP	PS G	HLWM 14355	YES, WMM 14355 WAS REVISED DURING 1H EVAPORATOR REVIEWS TO IDENTIFY TYPE OF CP AND INITIATE REPLACEMENT WITH 2 WIRE CPs & ADDITIONAL TESTING OF WIRING CONFIGURATION. NO ADDITIONAL CHANGES ARE REQUIRED.	MJR/ SMP
1317	EVAPORATOR CELL SUMP CP	PS G	HLWM 14355	YES, WMM 14355 WAS REVISED DURING 1H EVAPORATOR REVIEWS TO IDENTIFY TYPE OF CP AND INITIATE REPLACEMENT WITH 2 WIRE CPs & ADDITIONAL TESTING OF WIRING CONFIGURATION. NO ADDITIONAL CHANGES ARE REQUIRED.	MJR/ SMP
4030	TK38 GDL COP CP	GS G	HLWM 14355	YES, WMM 14355 WAS REVISED DURING 1H EVAPORATOR REVIEWS TO IDENTIFY TYPE OF CP AND INITIATE REPLACEMENT WITH 2 WIRE CPs & ADDITIONAL TESTING OF WIRING CONFIGURATION. NO ADDITIONAL CHANGES ARE REQUIRED.	MJR/ SMP

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WASTE REDUCTION LOOP EVALUATIONS (2H) -- 1/20/94

LOOP	DESCRIPTION	DESIGN CLASS	PROC	PROCEDURES ADEQUATE (Y/N) IF NOT, JUSTIFICATION OR CORRECTIVE ACTION	REVIEW BY
628	TK38 GDL RISER HIGH LEVEL DIP TUBE	PS G	HLWM 14376	YES, WMM 14376 WAS REVISED PER 1H REVIEW TO ADD LEAK AND REASONABLENESS CHECK WHEN RETURNED TO SERVICE. PEER VERIFICATION (PV) WAS ALSO ADDED FOR INSTALLATION STEPS. NEW PCR WRITTEN TO IMPROVE SWITCH ACTUATION STEPS. HOWEVER, SPECIFIC INTERLOCK CHECKS ARE PERFORMED UNDER WORK INSTRUCTIONS. REF. W700664	SJ
1078	TK43 GDL RISER HI LEVEL DIP TUBE	PS G	HLWM 14376	YES, WMM 14376 WAS REVISED PER 1H REVIEW TO ADD LEAK AND REASONABLENESS CHECK WHEN RETURNED TO SERVICE. PEER VERIFICATION (PV) WAS ALSO ADDED FOR INSTALLATION STEPS. NEW PCR WRITTEN TO IMPROVE SWITCH ACTUATION STEPS. HOWEVER, SPECIFIC INTERLOCK CHECKS ARE PERFORMED UNDER WORK INSTRUCTIONS. REF. W700694	SJ
1176	EVAPORATOR POT PRESSURE (DIP TUBE)	GS-G	HLWM 17026	NO, PCR TO ADD 9 POINT CALIBRATION AND VERIFY ROTOMETER FLOW, AND REASONABLENESS CHECK WHEN RETURNED TO NORMAL. ALSO IMPROVE BY INCLUDING ID OF LOCATION OF ALARMS & SPECIFYING LOW VENT TO ATMOSPHERE ON SKETCH. REF. M-M6-H-8338, W705284, W702240	SJ
1177	2 H EVAPORATOR POT SPECIFIC GRAVITY (DIP TUBE)	PS-G	WMWE 17035	NO, PCR TO ADD 9 POINT CALIBRATION AND VERIFY ROTOMETER FLOW, AND REASONABLENESS CHECK WHEN RETURNED TO NORMAL. ALSO IMPROVE BY INCLUDING ID OF LOCATION OF ALARMS & VALVES & SPECIFYING M&TE TO TAKE ACCEPTANCE CRITERIA. DCF REQD. REF. M-M6-H-8339, 7848, W705284, W701062	SJ
1178	EVAPORATOR POT LEVEL (DIP TUBE)	PS-G	WMWE 17035	NO, PCR TO ADD 9 POINT CALIBRATION AND VERIFY ROTOMETER FLOW, AND REASONABLENESS CHECK WHEN RETURNED TO NORMAL. ALSO IMPROVE BY INCLUDING ID OF LOCATION OF ALARMS & VALVES & SPECIFYING M&TE TO TAKE ACCEPTANCE CRITERIA. DCF REQD. REF. M-M6-H-8339, 7848, W705284, W701062	SJ

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WASTE REDUCTION LOOP EVALUATIONS (2H) -- 1/20/94

LOOP	DESCRIPTION	DESIGN CLASS	PROC	PROCEDURES ADEQUATE (Y/N) IF NOT, JUSTIFICATION OR CORRECTIVE ACTION	REVIEW BY
1180	EVAPORATOR POT TEMP CONTROL VALVE	CP-G	HLWM 17027	NO, PCR TO ADD 9 POINT CALIBRATION AND REASONABLENESS CHECK WHEN RETURNED TO NORMAL. ALSO IMPROVE BY INCLUDING ID OF LOCATION OF ALARMS & VALVES & SPECIFYING M&TE TO TAKE ACCEPTANCE CRITERIA, & ADDING PV FOR T/C HOOKUP. DCF REQD. REF. M-M6-H-8338, W705284, W701062, W701052	SJ
1181	EVAPORATOR POT LEVEL (BLUE PEN)	PS-G	HLWM 17036	NO, PCR TO ADD 9 POINT CALIBRATION AND VERIFY ROTOMETER FLOW, AND REASONABLENESS CHECK WHEN RETURNED TO NORMAL. ALSO IMPROVE BY INCLUDING ID OF LOCATION OF ALARMS & VALVES & SPECIFYING M&TE TO TAKE ACCEPTANCE CRITERIA. ALSO CHANGE SKETCH TO ISA SYMBOLS. REF. M-M6-H-8338, W705284, W701052, W704748	SJ
1185	2 H EVAPORATOR POT FOAM LEVEL	GS-G	WMWE 17024	YES, IMPROVE BY INCLUDING ID OF LOCATION OF ALARMS & VALVES & CLARIFICATIONS FOR HOOKUP OF TEST EQUIPMENT. M&TE INPUTS DO NOT COVER THE IPI ACCEPTABLE RANGE. REF. W705284, W701062, W704884, W708337	SJ
1201	2 H CONDENSER VENT TEMPERATURE	GS-G	WMWE 17069	YES, IMPROVE BY INCLUDING ID OF LOCATION OF ALARMS & VALVES & REASONABLENESS CHECK FOLLOWING COMPLETION. REF. W705284, W701063, M-M6-H-8342	SJ
1204	2 H CONDENSER BOTTOM TEMPERATURE	GS-G	WMWE 14906	YES, PCR WRITTEN FOR MINOR FORMAT CHANGES IN THE TESTING SECTION.	SJ

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WASTE REDUCTION LOOP EVALUATIONS (2H) -- 1/20/94

LOOP	DESCRIPTION	DESIGN CLASS	PROC	PROCEDURES ADEQUATE (Y/N) IF NOT, JUSTIFICATION OR CORRECTIVE ACTION	REVIEW BY
1207	CRC PUMP TANK LEVEL	GS G	WMWE 17116	NO, PCR TO ADD VERIFICATION OF ROTOMETER FLOW, IMPROVE BY INCLUDING ID OF LOCATION OF ALARMS & VALVES & CHANGE INPUT RANGES TO ENVELOPE ALLOWABLE "COME ON" RANGES. REF. W704974, W701063, M-M6-H 8342	SU
1209	2 H EVAPORATOR OVERHEAD VAPOR TEMPERATURE	GS G	HLWM 14906	YES, PCR WRITTEN FOR MINOR FORMAT CHANGES IN THE TESTING SECTION.	SU
1225	2 H OVERHEAD CELL SUMP LEVEL	GS G	WMWE 17041	NO, PCR TO ADD VERIFICATION OF ROTOMETER FLOW, IMPROVE BY INCLUDING ID OF LOCATION OF ALARMS & VALVES & CHANGE INPUT RANGES TO ENVELOPE ALLOWABLE "COME-ON" RANGES. ALSO ADD LEAK CHECKS FOLLOWING PLUG REMOVAL AT MANIFOLD. REF. M-M6-H-8341, W708395, W701070	SU
1227	2 H OVERHEAD TANK #1 LEVEL	GS G	WMWE 17030	YES, PCR WRITTEN TO ADD STEPS TO VERIFY LEAK FREE AFTER REPLACEMENT OF MANIFOLD PLUGS, ALSO ADD ID LOCATIONS OF LOOP COMPONENTS. REF. M-M6-H-8340, W701052, W701282	SU
1275	2 H FLASH TANK LEVEL	GS G	WMWE 17046	NO, PCR TO ADD VERIFICATION OF ROTOMETER FLOW, IMPROVE BY INCLUDING ID OF LOCATION OF ALARMS & VALVES & CHANGE INPUT RANGES TO ENVELOPE ALLOWABLE "COME-ON" RANGES. REF. M-M6-H-7849, W708395, W705885	SU

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WASTE REDUCTION LOOP EVALUATIONS (2H) -- 1/20/94

LOOP	DESCRIPTION	DESIGN CLASS	PROC	PROCEDURES ADEQUATE (Y/N) IF NOT, JUSTIFICATION OR CORRECTIVE ACTION	REVIEW BY
1276	TUBE BUNDLE EXIT PRESSURE	GS-G	HLWM 17042	NO, PCR TO ADD 9 POINT CHECK, USE OF M&TE FOR ACCEPTANCE CRITERIA (RATHER THAN IPI), AND ADDITION OF A REASONABLENESS CHECK FOLLOWING COMPLETION. REF. W701053, W704884, W705284	SU
1277	WARMING COIL BUNDLE EXIT PRESSURE	GS-G	HLWM 17043	NO, PCR TO ADD 9 POINT CHECK, USE OF M&TE FOR ACCEPTANCE CRITERIA (RATHER THAN IPI), ID OF LOCATIONS AND LOOP COMPONENTS, AND ADDITION OF A REASONABLENESS CHECK FOLLOWING COMPLETION. REF. W701053, W704884, W705284, W708395	SU
1316	2-H EVAPORATOR CELL SUMP LEVEL DIP TUBES	GS-G	WMWE 17034	NO, PCR WRITTEN TO ADD LOCATION AND ID OF ALL LOOP COMPONENTS, ROTOMETER FLOW VERIFICATION, AND LEAK CHECK FOLLOWING REMOVAL OF MANIFOLD PLUGS. REF. W708395, W701070, M-M6-H-8338, W701282	SU
1227 (L2)	OVERHEADS TANK #2 LEVEL (DIP TUBE)	GS-G	WMWE 17031, 14328	YES, PCR WRITTEN FOR 17031 TO INCLUDE ID OF LOCATIONS AND COMPONENTS AND 9 POINT CHECK IS RECOMMENDED. 14328 PCR TO ADD 9 POINT CHECK AND ADD SIGNOFF STEP FOR A CONDITIONAL STEP. REF. W701052, W701282, W704884, W708337	SU
1182	EVAPORATOR CELL EXHAUST CAM ACTIVITY	PS-G	5Q1.5: 314 HLWM 14305	YES, WMM 14305 WAS REVISED DURING 1H EVAP. REVIEW TO INCLUDE INTERLOCK CHECKS WHERE APPLICABLE. RADIOACTIVITY ALARM SETPOINTS ARE CONTROLLED UNDER HP PROCEDURES.	TDP

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WASTE REDUCTION LOOP EVALUATIONS (2H) -- 1/20/94

LOOP	DESCRIPTION	DESIGN		PROCEDURES ADEQUATE (Y/N)	REVIEW BY
		CLASS	PROC	IF NOT, JUSTIFICATION OR CORRECTIVE ACTION	
664	EVAPORATOR CELL EXHAUST CAM BLOWER LOW FLOW DP SWITCH	PS G	5Q1 5: 314 HLWM 14305. 14376	YES, WMM 14305 WAS REVISED DURING 1H EVAP. REVIEW TO INCLUDE INTERLOCK CHECKS WHERE APPLICABLE. RADIOACTIVITY ALARM SETPOINTS ARE CONTROLLED UNDER HP PROCEDURES. WMM 14376 WAS REVISED PER 1H REVIEW TO ADD LEAK AND REASONABLENESS CHECK WHEN RETURNED TO SERVICE. NEW PCR WRITTEN TO IMPROVE SWITCH ACTUATION STEPS.	TDP/ EMT

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2-H STARTUP SCOP REVIEW

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LOOP #/WR/PROC	RESTART(Y/N)	STONE/DATE	COMMENTS
1207	N	next rev.	Backup CP in CFC pump tank.
1217	N	next rev.	Pressure maintained by air regulating system
1			minor comments only.
1227	N	next rev.	overflow to recer. cell sump
1275	N	next rev.	overflow to rec. cell.
1229	N	next rev.	Pressure maintained by air regulating system.
1276	N	next rev.	conductivity probe backup
1316	N	next rev.	
1204 (19206)			
1207 (19706)			
1201	N	next rev.	minor comments only.
1185	N	next rev.	overflow eventually to overhead tank.
1181	N	next rev.	overflow to condenser would be contained & would result in rad. alarm. Minor comments

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2-II STARTUP SCOPE REVIEW

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LOOP #/WR/PROC	RESTART(Y/N)	MILESTONE/DATE	COMMENTS
1176	Y	restart	cf loop, minimize uncertainty
1177	N	next rev.	minor enhancements, reset
1178	N	next rev.	values not significant
1176	N	next rev.	minor comments
628 (14376)	Y N	next rev. restart	no interlocks associated H ₂ to generate fiks to check specific interlocks for startup:
1078 (14376)	Y N	next rev. restart	" " "
616 (14355(A))	Y	restart	14355 revised to verify 2-wire probes or operability of 1-wire.
1065	Y	restart	" "
1066	Y	restart	" "
1083	Y	restart	" "
1237	Y	restart	" "
1315	Y	restart	" "
1317	Y	restart	" "
4030	Y	restart	" "
Vent line LDF CP	Y	restart	" "

Duplicate of 1083
11/7/93, 1/21/94

WFS
1/21/94

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2-H STARTUP SCOP REVIEW

LOOP #/WR/PROC	RESTART(Y/N)	MILESTONE/DATE	COMMENTS
1935 (1935/21)	Y	restart	1935S revised to verify 2-wire probes - operability of 1-wire
TR 55 HW House Vapors	N	as reqd	Knowledge verification reduces failure vulnerability.
GT House Vapors	N	"	"
Upper La House Vapors	N	"	"
Overhead Cell Vapors	N	"	"
Feed Pump	N	"	"
Cont House Vapors	Y	restart	1930S revised to check failure
1182	Y	restart	1930S revised to check failure

2-II STARTUP SCOPE REVIEW

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APPROVED BY (SIGN/DATE):

OPERATIONS	<u>Derrick Blocker</u>	<u>1/24/94</u>
HLWE	<u>Mike J. Rea</u>	<u>1/24/94</u>
PROCEDURES	<u>M. Russell</u>	<u>1/24/94</u>
MAINTENANCE	<u>C. R. Jones</u>	<u>1/24/94</u>
QA		
OTHER		

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