Wisconsin Electric POWER COMPANY
231 W. MICHIGAN, P.O. BOX 2046, MILWAUKEE, WI 53201

March 31, 1981

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. NUCLEAR REGULATORY COMMISSION
Washington, D. C. 20555

Dear Mr. Denton:

DOCKET NOS. 50-266 AND 50-301
RESPONSE TO NUREG-0737
UPDATE TO SCHEDULE REQUIREMENTS
AND IMPLEMENTATION STATUS
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

This letter provides additional information related to the requirements of NUREG-0737, "Clarification of TMI Action Plan Requirements", for the Point Beach Nuclear Plant, Units 1 and 2. This information includes Revision 1 to our Schedule Table and Notes which provides schedule and implementation status, as of March 31, 1981. Each item is addressed relative to the requirements and schedules stated in NUREG-0737 with clarification provided for those items completed, updated, or otherwise modified since our December 23, 1980 response. Your review of this response should be made with reference to prior Wisconsin Electric Power Company submittals. We have not repeated the pertinent Note referenced in the Schedule Table for those items whose status has not changed since our December 23, 1980 submittal. Additional attachments to the Schedule Table and Notes are included with this submittal.

Certain engineering, construction, and training services required to complete several of the NUREG-0737 requirements are being performed by consultants and contractors. The completion date of these items and other items requiring plant modification is, of course, dependent on the contractor's and the supplier's manufacturing schedule. Since all licensees are attempting to meet the same set of implementation dates, some material and personnel shortages may well be unavoidable. These shortages may result in some delays in implementation schedules which are beyond our control.

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We would be pleased to respond to any questions you may have regarding this response.

Very truly yours,

C. W. Fay, Director
Nuclear Power Department

Enclosures

Subscribed and sworn to before me
This 31st day of March, 1981.

_____
Notary Public, State of Wisconsin

My commission expires _____.

Copy to: NRC Resident Inspector

POST-TMI REQUIREMENTS FOR OPERATING REACTORS

Clarification Item	Shortened Title	Description	Implementation Schedule	PBNP Applicability	PBNP Schedule	Remarks
I.A.1.1	Shift Technical Advisor	1. On duty	1/1/80	Yes	Complete	On duty since 1/1/80 - Reference 1
		2. Tech Specs	12/15/80	Yes	Complete	Reference 15
		3. Trained per LL Cat B	1/1/81	Yes	Complete	Note I.A.1.1.3
		4. Describe long-term program	1/1/81	Yes	Complete	Note I.A.1.1.4
I.A.1.2	Shift Supervisor Responsibilities	Delegate non-safety duties	1/1/80	Yes	Complete	Reference 1
I.A.1.3	Shift Manning	1. Limit overtime	11/1/80	Yes	Complete (1/10/81 Implementation Date)	PBNP Approved Procedure 4.3, Operations Division Personnel Assignments and Scheduling, Rev. 0
		2. Min Shift Crew	7/1/82	Yes	N.A.	Note I.A.1.3.2
I.A.2.1	Immediate Upgrading of RO and SRO Training and Qualifications	1. SRO Experience	5/1/80	Yes	Complete	
		2. SROs be ROs 1 yr	12/1/80	Yes	Complete	
		3. Three mo. trng on shift	8/1/80	Yes	Complete	Note I.A.2.1.1/4
		4. Modify Training	8/1/80	Yes	Complete	
		5. Facility Certification	5/1/80	Yes	Complete	Note I.A.2.1.5
I.A.2.3	Administration of Training Programs	Instructors Complete SRO Exam	8/1/80	Yes	Complete	Note I.A.2.3
I.A.3.1	Revise Scope and Criteria for Licensing Exams	1. Increase scope	5/1/80	Yes	Complete	
		2. Increase passing grade	5/1/80	Yes	Complete	
		3. Simulator exams	6/1/80	N.A.	---	Note I.A.3.1.3

N.A. = Schedule not applicable to PBNP
TBD = To be determined at a later date per the remarks
(1) Revision 1 dated March 31, 1981.

Clarification Item	Shortened Title	Description	Implementation Schedule	PBNP Applicability	PBNP Schedule	Remarks	
I.C.1	Short-Term Accident and Procedures Review	1. SB LOCA	6/1/80	Yes	Completed		
		2. Inadequate Core Cooling					
		a. Reanalyze and propose guidelines	1/1/81	Yes	Completed	Generic procedures already submitted to NRC	1
		b. Revise Procedures	First refueling outage after 1/1/82	Yes	First refueling outage after 1/1/82		
		3. Transients and accidents				Note I.C.1.3	
		a. Reanalyze and propose guidelines	1/1/81	Yes	Completed		1
		b. Revise procedures	First refueling outage after 1/1/82	Yes	First refueling outage after 1/1/82		
I.C.2	Shift and Relief Turnover Procedures	Implement shift turnover checklist	1/1/80	Yes	Completed		
I.C.3	Shift-Supervisor Responsibility	Clearly define superv and oper responsibilities	1/1/80	Yes	Completed		
I.C.4	Control-Room Access	Establish authority limit access	1/1/80	Yes	Completed		
I.C.5	Feedback of Operating	Licensee to implement procedures	1/1/81	Yes	Completed (1/1/81 Effective Date)	PBNP Administrative Procedure 3.15.7, Rev. 0, approved 12/19/80, "Procedure for Feedback of Operating Experience to Plant Staff"	

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Clarification Item	Shortened Title	Description	Implementation Schedule	PBNP Applicability	PBNP Schedule	Remarks
I.C.6	Verify Correct Performance of Operating Activities	Revise performance procedures	1/1/81	Yes	Completed	PBNP Administrative Procedure 4.13, Rev. 9, effective 6/20/80, "Equipment Isolation Procedure"
I.D.1	Control Room Design Reviews	Preliminary assessment and schedule for correcting deficiencies	TBD	Yes	TBD	Note I.D.1
I.D.2	Plant Safety Parameter Display Console	1. Description	TBD	Yes	7/1/81 (Projected)	Note I.D.2
		2. Installed	TBD	Yes	1/1/83 (Projected)	
		3. Fully implemented	TBD	Yes	7/1/83 (Projected)	
II.B.1	Reactor Coolant System Vents	1. Design vents	7/1/81	Yes	7/1/81	
		2. Install Vents (LL Cat B)	7/1/82	Yes	7/1/82	
		3. Procedures	1/1/82	Yes	1/1/82	
II.B.2	Plant Shielding	1. Review designs	1/1/80	Yes	Completed	
		2. Plant modifications (LL Cat B)	1/1/82	Yes	6/1/82	Note II.B.2.2 (1)
		3. Equipment qualification	6/30/82	Yes	6/30/82	
II.B.3	Post Accident Sampling	1. Interim system	1/1/80	Yes	Completed	
		2. Plant modifications (LL Cat B)	1/1/82	Yes	1/1/82	Note II.B.3

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Clarification Item	Shortened Title	Description	Implementation Schedule	PBNP Applicability	PBNP Schedule	Remarks	
II.B.4	Training for Mitigating Core Damage	1. Develop training program	1/1/81	Yes	Complete		
		2. Implement program				Note II.B.4	1
		a. Initial	4/1/81	Yes	Complete		
		b. Complete	10/1/81	Yes	10/1/81		
II.D.1	Relief and Safety Valve Test Requirements	1. Submit program	1/1/80	Yes	Completed	Note II.D.1	
		2. RV and SV Testing (LL Cat B)					
		a. Complete testing	7/1/81	Yes	9/1/81	Note II.D.1.2a	
		b. Plant-specific report	10/1/81	Yes	1/1/82	Note II.D.1.2b	
		3. Block-Valve testing	7/1/82	Yes	N.A.	Note II.D.1.3	
II.D.3	Valve Position Indication	1. Install direct indications of valve position	1/1/80	Yes	Completed		
		2. Tech Specs	12/15/80	Yes	Complete	Reference 15	1
II.E.1.1	Auxiliary Feedwater System Evaluation	1. Short term	7/1/81	Yes	TBD	Note II.E.1.1	
		2. Long term	1/1/82	Yes	TBD		
II.E.1.2	Auxiliary Feedwater System Initiation and Flow	1. Initiation					
		a. Control grade	6/1/80	Yes	N.A.		
		b. Safety grade	7/1/81	Yes	Original Plant Design	References 1, 2, and 3.	
		2. Flow Indication					
		a. Control grade	1/1/80	Yes	Complete	Note II.E.1.2	1
		b. LL A Tech Specs	12/15/80	Yes	Complete	Reference 15	1
		c. Safety grade	7/1/81	Yes	7/1/81		

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Clarification Item	Shortened Title	Description	Implementation Schedule	PBNP Applicability	PBNP Schedule	Remarks	
II.E.3.1	Emergency Power for Pressurizer Heaters	1. Upgrade power	1/1/80	Yes	Original Plant Design	References 1, 2, and 3.	
		2. Tech Specs	12/15/80	Yes	Completed	Reference 15	1
II.E.4.1	Dedicated Hydrogen Penetrations	1. Design	1/1/80	Yes	Original Plant Design	References 1, 2, and 3.	
		2. Install	7/1/81	Yes	N.A.		
II.E.4.2	Containment Isolation Dependability	1-4. Imp. diverse isolation	1/1/80	Yes	TBD	Note II.E.4.2.1/4	
		5. Cntmt pressure setpoint					
		a. Specify pressure	1/1/81	Yes	1/1/81	6 psig Note II.E.4.2.5	
		b. Modifications	7/1/81	Yes	N.A.		
		6. Cntmt purge valves	1/1/81	Yes	Completed	Administratively closed.	
		7. Radiation signal on purge valves	7/1/81	Yes	Original Plant design	Reference Point Beach FFDSAR Section 4.2 and Fig. 5.2-8	
		8. Tech Specs	12/15/80	Yes	Completed	Reference 15	1
II.F.1	Accident Monitoring	1. Noble gas monitor	1/1/82	Yes	1/1/82*	Note II.F.1.1/2	
		2. Iodine/ particulate sampling	1/1/82	Yes	1/1/82*	Note II.F.1.2	1
		3. Containment high-range monitor	1/1/82	Yes	1/1/82*		
		4. Containment	1/1/82	Yes	1/1/82*		
		5. Containment water level	1/1/82	Yes	1/1/82*		
		6. Containment hydrogen	1/1/82	Yes	TBD	Note II.F.1.6	

*Schedule is based on delivery of equipment on schedule.

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Clarification Item	Shortened Title	Description	Implementation Schedule	Applicability	PBNP Schedule	Remarks	
II.F.2	Instrumentation for Detection of Inadequate Core Cooling	1. Subcool meter	1/1/80	Yes	Complete	Note II.F.2.1	
		2. Tech Spec (LL Cat A)	12/15/80	Yes	Complete	Reference 15	1
		3. Install level instruments (LL Cat B)	1/1/82	Yes	6/1/82*	Note II.F.2.3	
II.G.1	Power Supplies for Pressurizer Relief Valves, Block Valves, and Level Indicators	1. Upgrade to emerg sources	1/1/80	Yes	Original Plant Design		
		2. Tech Specs	12/15/80	Yes	Complete	Reference 15	1
II.K.1	IE Bulletins	79-05, -06. -08	Bulletin specific	Yes	Bulletin specific		
II.K.2	Orders on B&W Plants	8. Upgrade AFW system	See II.E.1.1	N.A.	---		
		9. FEMA on ICS	8/17/79	N.A.	---		
		10. Safety-grade trip	7/1/81	N.A.	--		
		11. Operator training, drilling	Complete	N.A.	--		
		13. Thermal-mechanical report	1/1/82	Yes	1/1/82	Note II.K.2.13	
		14. Lift frequency of PORVs and SVs	See II.K.3.7	N.A.	---		
		15 Effects of slug flow on OTSGS	Complete	N.A.	---		
		16. RCP seal damage	Complete	N.A.	---		
		17. Voiding in RCS	a. Complete	N.A.	---		
			b. 1/1/82	Yes	1/1/82	Note II.K.2.17	
		19. Benchmark analysis of seq. AFW flow	a. Complete	N.A.	---		
			b. 1/1/82	Yes	TBD	Note II.K.2.19	
		20. System response to SB LOCA	Complete	N.A.	---		

*Schedule is based on delivery of equipment on schedule.
(1) Revision 1 dated March 31, 1981

Clarification Item	Shortened Title	Description	Implementation Schedule	PBNP Applicability	PBNP Schedule	Remarks	
II.K.3	Final recommendations, B&O Task Force	1. Auto PORV isolation					
		a. design	7/1/81	Yes	NR		
		b. Test/ install	1st refuel 6 mos after staff approval	Yes	NR	Note II.K.3.1 and Reference 4	1
		2. Report on PORV failures	1/1/81	Yes	Complete	Note II.K.3.2	1
		3. Reporting SV and RV failures and challenges	1/1/81	Yes	Complete	Note II.K.3.3	1
		5. Auto trip of RCPS					
		a. Propose modifications	7/1/81	Yes	TBD	Note II.K.3.5	
		b. Modify	3/1/82	Yes	TBD		
		7. Eval of PORV opening probability	1/1/81	N.A.	---		
		9. PID controller	1/1/81	Yes	Completed	Controller change made upon initial notification by vendor prior to TMI-2 (Reference 4)	
		10. Proposed anticipatory trip modifications	Plant specific	Yes	Original Plant Design	Reference 4	
		11. Justify use of certain PORV	Plant specific	Yes	N.A.	As part of the original Plant design (different from TMI-2), Point Beach has Copes-Vulcan PORVs which corresponds to the Westinghouse data base and, thus, no justification is needed.	

N.R. Not Required
(1) Revision 1 dated March 31, 1981

12. Anticipatory trip on turbine trip					
	a. Confirmation or proposed modifications	1/1/81	Yes	Original plant design	Reactor trip caused by turbine trip bypassed below 50% power as detected by the power range detectors.
	b. Modify	1st refuel 60 mo. after staff approval	N.A.	---	

Clarification Item	Shortened Title	Description	Implementation Schedule	PBNP Applicability	PBNP Schedule	Remarks
II.K.3 (Continued)	Final recommendations, B&O Task Force	13. HPCI & RCIC init levels				
		a. Analysis	1/1/81	N.A.	---	
		b. Modify	7/1/81	N.A.	---	
		14. iso condenser isol modification	1/1/82	N.A.	---	
		15. Isolation of HPCI and RCIC modification	7/1/81	N.A.	---	
		16. Challenges and failures to relief valves				
		a. Study	4/1/81	N.A.	---	
		b. Modify	1st refuel or 1 yr after approval	N.A.	---	
		17. ECC system outages	1/1/81	Yes	Completed	Note II.K.3.17 (1)
		18. ADS actuation				
		a. Study	4/1/81	N.A.	---	
		b. Propose mods	4/1/82	N.A.	---	
		c. Modification	1st refuel 6 mo after staff approval	N.A.	---	
		19. Interlock recirc pump modification	7/1/81	N.A.	---	
		20. Loss of SVC	7/1/81	N.A.	---	
		21. Restart of CCS and LPCI				
		a. Design	1/1/81	N.A.	---	
		b. Modification	1st refueling 60 mo after staff approval	N.A.	---	

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Clarification Item	Shortened Title	Description	Implementation Schedule	PBNP Applicability	PBNP Schedule	Remarks
II.K.3 (Continued)	Final recommendations, B&O Task Force	22. RCIC suction				
		a. Verify procedures.	1/1/81	N.A.	---	
		b. Modification	1/1/82	N.A.	---	
		24. Space cooling for HPCI/RCIC modifications	1/1/82	N.A.	---	
		25. Power on pump seals				
		a. Propose mods	7/1/81	N.A.	---	Note II.K.3.25
			1/1/82	Yes	1/1/82	
		b. Modification	1/1/82	N.A.	---	
			7/1/82	Yes	N.A.	
		27. Common ref. level	7/1/81	N.A.	---	
		28. Qual of ADS accumulators	1/1/82	N.A.	---	
		29. Performance of isolation condensers	4/1/81	N.A.	---	
		30. SB LOCA methods				
		a. Schedule outline	11/15/80	Yes	TBD	Note II.K.3.30
		b. Model	1/1/82	Yes	TBD	
		c. New analyses	1/1/83 or 1 yr after staff approval	Yes	TBD	
		31. Compliance with CFR 50.46	1/1/83 or 1 yr after staff approval	Yes	TBD	Note II.K.3.31
		40. RCP seal damage	See II.K.2.16	N.A.	---	
		43. Effects of slug flow	See II.K.2.15	N.A.	---	
		43. Eval transient with single failure	1/1/81	N.A.	---	
		45. Manual depressurization	1/1/81	N.A.	---	

Clarification Item	Shortened Title	Description	Implementation Schedule	PBNP Applicability	PBNP Schedule	Remarks	
II.K.3 (Continued)	Final recommendations B&O Task Force	46. Michelson concerns	Complete	N.A.	---		
		57. Manual act of ADS	TBD	N.A.	---		
III.A.1.1	Emergency Preparedness, Short Term	Short-term improvements	Complete	Yes	Complete		
III.A.1.2	Upgrade Emergency Support Facilities	1. Interim TSC OSC and EOF	Complete	Yes	Complete	Note III.A.1.2	1
		2. Design	TBD	TBD	TBD		
		3. Modifications	TBD	TBD	TBD		
III.A.2	Emergency Preparedness	1. Upgrade emergency plans to App. E, 10 CFR 50	4/1/81	Yes	Complete	Note III.A.2.1	1
		2. Meteorological data	6/1/83	Yes	7/1/82	Note III.A.2.2	1
III.D.1.1	Primary Coolant Outside Containment	1. Leak reduction	Complete	Yes	Complete	Currently changing to a yearly testing schedule for both units coincident with refueling outages (References 1, 2, and 3)	
		2. Tech Specs	12/15/80	Yes	Complete	Reference 15	1
III.D.3.3	Inplant Iodine Monitoring	1. Provide means to determine presence of radioiodine	Complete	Yes	Complete		
		2. Modifications to accurately measure I2	1/1/81	Yes	Complete	Note III.D.3.3	1
III.D.3.4	Control Room Habitability	1. Review	1/1/81	Yes	Completed	Note III.D.3.4	1
		2. Modification	1/1/83	Yes	1/1/83	Note III.D.3.4	

(1) Revision 1 dated March 31, 1981.

RESPONSE TO NUREG-0737

POST-TMI REQUIREMENTS

FOR OPERATING PLANTS

Point Beach Nuclear Plant, Units 1 and 2
Docket Nos. 50-266 and 50-301

Schedule Table and Notes
Revision 1 - March 31, 1981

I.A.1.1.3 SHIFT TECHNICAL ADVISOR TRAINING

All Duty Technical Advisor training was completed by March 1, 1981, per Reference 17, with the exception of training for mitigating core damage as addressed in II.B.4. The scheduled completion date for this additional training is October 1, 1981. The content of this training is addressed in the attached program description.

I.A.1.1.4 SHIFT TECHNICAL ADVISOR LONG-TERM PROGRAM DESCRIPTION

The Duty Technical Advisor long-term training program description was submitted to the NRC on February 26, 1981, by Reference 17.

I.C.1.3 GUIDANCE FOR THE EVALUATION AND DEVELOPMENT OF PROCEDURES FOR TRANSIENTS AND ACCIDENTS

The program to achieve compliance with NUREG-0737, I.C.1, was described in Owners Group letter, OG-47, to S. S. Hanauer dated December 15, 1980 (Reference 10). That letter identified generic procedural guidelines and supporting material already submitted to the NRC and identified three phases of proposed future action. Your letter, S. S. Hanauer to R. A. Newton dated December 17, 1980 (Reference 11), responded to a November 12 meeting and identified several additional items of concern. Owners Group letter, OG-48, dated January 28, 1981 (Reference 14), responded to the items listed in the NRC's December 17 letter.

The three phases outlined in OG-47 were nearing completion during the end of February and a meeting was held on February 20, 1981, between the Westinghouse Owners Group and members of your Staff, which was intended to update you and your Staff on our activities to date, get feedback from your Staff with regard to the program activities, and to identify the items that are needed to complete the program. It is our understanding, as a result of the February 20 meeting, that completion of the items as described in Owners Group letter, OG-54, to S. S. Hanauer dated March 18, 1981, Reference 20, will fully address the NRC requirements in the procedures evaluation and development areas, as set forth in I.C.1.

II.B.2.2 PLANT SHIELDING

As described in Reference 12, shielding modifications are being evaluated for the Point Beach Nuclear Plant. Three areas of the auxiliary building are being studied for installation of permanent

II.B.2.2 Continued

shielding, relocation of plant equipment, or the use of temporary portable shielding to reduce post-accident exposure of equipment and personnel. Each of these is described below.

A consultant has been retained to begin the basic design evaluations for relocation of portions of the Unit 1 safety injection lines. This relocation should eliminate the major radiological contributor to exposure of adjacent electrical equipment and reduce the dose rates for personnel access in the corridor beneath the existing piping. Since these modifications require the unit to be at cold shutdown and the purchase of safety-grade equipment, not yet designed, implementation by the fall refueling outage in 1982 would be the earliest achievable date. A complete access study was performed with the existing piping configuration (Reference 1) and post-accident operations can be performed by minimizing access times. No equipment should fail due to radiation exposure within thirty days following the postulated accident (Reference 2).

Proposals for design of shielding for electrical equipment near a portion of the Unit 2 safety injection lines is under evaluation. Installation of any required modifications should be possible by the June 30, 1982 NRC implementation date. Proposals for the evaluation and design of portable and permanent shielding in the area of the C-59 control panel (References 1 and 2) are currently being evaluated. Installation should be possible by the January 1, 1982 NRC implementation date.

Additionally, wall penetrations for piping and electrical runs between the auxiliary and control buildings were identified as requiring shielding. This was made necessary by implementation of IE Bulletin 80-11, which requires the removal of concrete block which fills the unused portions of these wall openings. New shielding for these penetrations is being designed for installation when the existing block is removed. This work is scheduled for completion prior to the June 30, 1982 NRC implementation date.

II.B.4 TRAINING FOR MITIGATING CORE DAMAGE

The program description and content for this training is provided in the attached document, "Point Beach Nuclear Plant, Mitigating Core Damage Training Program", Revision 0, March 16, 1981. Table 1 of the attachment provides the specific training requirements for plant personnel. Completion of training for all individuals involved will follow the initial training session and is scheduled for completion by October 1, 1981.

Part 1 training for this program was integrated into and completed as part of the licensed operator retraining program. All licensed plant personnel and Duty Technical Advisors completed this training prior to March 31, 1981.

II.E.1.2 AUXILIARY FEEDWATER SYSTEM INITIATION AND FLOW-FLOW INDICATION

The auxiliary feedwater flow indication of flow to each steam generator has been implemented for Unit 1 prior to March 31, 1981. The Unit 2 flow indication will be implemented during the refueling outage scheduled to begin on April 17, 1981. During that outage it will be possible to install the orifice plates and pressure taps required for the new Foxboro differential pressure transmitters and complete the implementation. The auxiliary feedwater system and flow indication has been described in References 1, 2, 3, 9, 12, and submittals by Wisconsin Electric in response to IE Bulletin 79-06B.

The steam generator flow indication instrumentation channels, when fully implemented, will be environmentally qualified to meet the requirements of IE Bulletin 79-01B. The model of Foxboro transmitter used in the system is currently undergoing a complete 79-01B environmental testing program. This program is scheduled for completion by June 30, 1982. Any changes required of the installed transmitters will follow the program completion.

Ultimately, power to the flow indication instrumentation channels will originate from highly reliable, battery-backed, Class IE power sources. Implementation of this power source will, however, require the completion of an instrument bus upgrade involving new chargers, batteries, inverters, and electrical distribution equipment. The design of this modification is nearly complete. Construction and installation will be completed consistent with other TMI modifications, with operation by early 1982. Until then, the channels will be powered by diverse, highly reliable, non-battery-backed power sources.

Periodic testability has been designed into the channel circuitry. Channel component purchase, handling, and installation was covered under the quality assurance program implemented at Point Beach Nuclear Plant. Display of auxiliary feedwater flow to each steam generator is continuous and was installed taking into consideration operator use, control room human engineering, and available space on existing control boards.

II.F.2.3 INSTRUMENTATION FOR DETECTION OF INADEQUATE CORE COOLING - INSTALL LEVEL INSTRUMENTS

The reactor vessel level system design and description has been provided in References 1 and 2. The detailed design of the system is in progress but has resulted in possible changes to how the system will be implemented due to selection of available qualified hardware, considerations for how the system will be installed, accuracy of the signal processing system and maintainability of the system after installation. The planned system will still use vessel differential pressure as the sensed parameter for the determination of vessel water level. Due to these difficulties, the report detailing the design of the planned instrumentation for the monitoring of inadequate core

II.F.2.3 Continued

cooling will be submitted by July 1, 1981, not the April 1, 1981 date indicated in Reference 12. Our aim is to still meet the planned schedule for having the vessel level systems operational for Unit 1 by January 1, 1982, and by June 1, 1982 for Unit 2. This is based on delivery of equipment on schedule to meet the Unit 1 fall 1981 and Unit 2 spring 1982 refueling outages.

II.K.3.1 INSTALLATION AND TESTING OF AUTOMATIC POWER-OPERATED RELIEF VALVE ISOLATION SYSTEM

Based on the previous operating history at the Point Beach Nuclear Plant during which no PORV has failed open, we see no need for an automatic isolation system. We believe that such a system would add unnecessary complexity to a well-design, functional system and may, in fact, contribute to a reduction in safety and operator attention to the PORV status. Such a system may also reduce the number of options available to the operator and, thus, limit the accident response capability for the plant. The conclusion in WCAP-9804, as quoted in II.K.3.2, supports the positions stated above. Therefore, a system which automatically closes the PORV isolation valves will not be implemented at the Point Beach Nuclear Plant.

II.K.3.2 REPORT ON OVERALL SAFETY EFFECT OF POWER-OPERATED RELIEF VALVE ISOLATION SYSTEM (PWR VENDOR REPORT ON PORV FAILURE REDUCTION

The Owners Group of Utilities with Westinghouse plants has submitted a report on the overall safety effect of PORVs. This report includes historical valve failure rate data and actions taken since the TMI-2 event to decrease the probability of a stuck-open PORV. The report was submitted to the NRC as WCAP-9804, "Probabilistic Analysis and Operational Data in Response to NUREG-0737, Item II.K.3.2, For Westinghouse NSSS Plants", and transmitted via Owners Group letter OG-52, R. Jurgensen to J. Miller, dated March 13, 1981 (Reference 19).

As per the Wisconsin Electric submittal of December 23, 1980, in response to Items II.K.3.1 and II.K.3.2 of NUREG-0737, there is no operating history at the Point Beach Nuclear Plant during which a PORV has failed to open or close. Also, several post-TMI actions have been taken to reduce the probability of a small break LOCA caused by a stuck-open PORV. This includes operator training, revisions to procedures, and instrumentation wiring changes. All of the modifications described in Section 3.4.2 of WCAP-9804 have been implemented at Point Beach Nuclear Plant. In addition, the current plant operating pressure of 2,000 psia provides additional operating margin to the setpoint for PORV opening.

II.K.3.2 Continued

WCAP-9804 describes in Section 3.5 an evaluation of an automatic PORV block valve closure concept. The conclusion stated in this section is as follows: "The concept of an automatic PORV block valve closure system, which closes the PORV isolation valves when lower pressure is sensed subsequent to a PORV failing to close, cannot be warranted on the basis of providing additional protection against a PORV LOCA. Such a system, however, is also nc expected to be detrimental to reactor safety considering the PORV LOCA, steam generator tube rupture recovery, or ICC recovery procedures." Based on the conclusion that no benefit in safety is achieved by an automatic PORV block valve closure system, a system which performs this function will not be implemented at the Point Beach Nuclear Plant.

II.K.3.3 REPORTING SAFETY AND RELIEF VALVE FAILURES AND CHALLENGES

Covering the reporting period from April 1, 1980 through December 31, 1980:

> No power-operated relief valves or Code safety valves, connected to the Point Beach Nuclear Plant primary coolant system off of the pressurizer steam space, have been challenged by any plant operations or operating conditions. No power-operated relief valves or Code safety valves have failed.

This information is being reported for the initial nine-month period specified by the NRC as part of the Point Beach Nuclear Plant Annual Report for 1980. It is included in this submittal as an errata item to that report, which was submitted prior to March 1, 1981. Future reports of any PORV challenges or failures will be for the full one-year period and will be included as a regular reporting item on future annual reports for the plant.

II.K.3.17 ECCS OUTAGE REPORT

A report covering the time period from January 1, 1976 through December 31, 1980 is attached to this submittal.

III.A.1.2 UPGRADING EMERGENCY SUPPORT FACILITIES

All of the instrumentation described in Reference 2 was installed in the temporary Technical Support Center prior to March 1, 1981, with the exception of wind speed and direction indicators. The instrumentation is fully operational with the following exceptions:

III.A.1.2 Continued

1. Auxiliary feedwater flow;

2. One T_h and T_c loop in each unit;

3. Containment sump level; and

4. Containment high-range radiation.

Item 1, auxiliary feedwater flow to the steam generators, has been implemented for Unit 1 and will be implemented for Unit 2 during the Unit 2 refueling outage which is scheduled to begin April 17, 1981 (See II.E.1.2 above). Item 2 is implemented only for one T_h and T_c loop in each unit. The remaining T_h and T_c loop and Items 3 and 4 will be operational when the new instrumentation racks and auxiliary safety control panels are installed and operational in early 1982 (Reference 12, Item II.F.2.1).

A training session was held on March 11, 1981 for all Duty and Call personnel and all Duty Technical Advisors to cover the parameters displayed. User instructions and an appropriate continuing training program are being developed.

III.A.2.1 EMERGENCY PREPARENDESS - UPGRADED EMERGENCY PLANS TO APPENDIX E, 10 CFR 50

Effective April 1, 1981, Wisconsin Electric will be implementing its revised Emergency Plan in accordance with 10 CFR 50.47S2.

III.A.2.2 EMERGENCY PREPAREDNESS - METEOROLOGICAL DATA

Wisconsin Electric has provided in Reference 13 a description of its plans for upgrading the meteorological measurements program at Point Beach Nuclear Plant. The implementation schedule for this upgrading is given in Section C of the description. The estimated completion date is July 1, 1982.

III.D.3.4 CONTROL ROOM HABITABILITY

Reference 12 provides an initial response to the requirements pertaining to the control room habitability evaluation. Additional information was provided in Reference 13 and the final report on control room habitability for Point Beach Nuclear Plant was transmitted by our letter of February 23, 1981 (Reference 16).

III.D.3.4 Continued

As indicated in the final report, a supply of potassium iodide tablets, eye protection, and protective clothing has been provided in the control room in conjunction with other preparations for implementing the revised Emergency Plan. Portable shielding to be placed in front of doorways and windows is being designed and will be installed on or before January 1, 1983. Technical Specifications 15.3.12 and 15.4.11 already adequately address control room emergency filtration, and no further changes are required.

II.F.1.2 IODINE/PARTICULATE SAMPLING

Two aspects of this item, one schedular and one technical, require further clarification of our position as addressed in our submittals of December 23, 1980, and March 4, 1981.

In the original September 5, 1980 letter from Mr. D. G. Eisenhut to All Licensees, no preimplementation review was required, and implementation and documentation dates were identical, i.e., October 1, 1981. In the final November 1980 issuance of NUREG-0737, NRC continues its position that no preimplementation review is required and delays the implementation date to January 1, 1982. However, the text states that "By January 1, 1981 operating reactors should have available for review the final design details of the implementation of the above position and clarification." Since no preimplementation review is required and since final design details and as-built drawings cannot be provided before implementation, we have concluded that this date is an error and that January 1, 1982 is intended. Accordingly, final design details of the implementation will be submitted by January 1, 1982.

As stated in both our December 23, 1980 and March 4, 1981 submittals, we anticipate compliance with the technical intent of the iodine sampling requirements except for the requirement for isokinetic and representative sampling per ANSI N13.1 (1969). These additional requirements in the November 1980 revision of NUREG-0737 regarding iodine sampling and analysis have resulted in a re-examination of our design approach. We have procured Eberline SPING units for our gaseous monitoring system and intended that iodine sampling equipment be added near or on these units. In order to meet the ANSI criteria, the sampler must be located very close to the vent being sampled. However, personnel radiation dose considerations may require sampling units to be located some distance away from the point of vent sampling, as planned in our original design considerations for the SPINGs.

REFERENCES

1. S. Burstein (WE) to H. R. Denton (NRC), December 31, 1979, "Implementation of NUREG-0578"

2. C. W. Fay (WE) letter to H. R. Denton (NRC), March 14, 1980, "Implementation of NUREG-0578"

3. A. Schwencer (NRC) letter to S. Burstein (WE), April 9, 1980, "Evaluation of Compliance with Category "A" Lessons Learned Requirements"

4. C. W. Fay (WE) letter to H. R. Denton (NRC), June 11, 1980, "Implementation of Five Additional TMI-2 Related Requirements"

5. C. W. Fay (WE) letter to H. R. Denton (NRC), November 3, 1980, "Status of Duty and Call Technical Advisor Training"

6. C. W. Fay (WE) letter to H. R. Denton (NRC), December 1, 1980, "Revised Emergency Plan"

7. C. W. Fay (WE) letter to H. R. Denton (NRC), November 3, 1980, "Operating Licenses DPR-24 and DPR-27, Interim Criteria for Shift Staffing"

8. C. W. Fay (WE) letter to H. R. Denton (NRC), September 22, 1980, "Comments on Draft NUREG-0696, Functional Criteria for Emergency Response Facilities"

9. S. Burstein (WE) letter to H. R. Denton (NRC), October 20, 1979, "Implementation of NUREG-0578" - including TMI Accident Review Task Force Report (Section 3.6.A)

10. R. W. Jurgensen (WOG) letter to S. S. Hanauer (NRC), OG-47, December 15, 1980, "Westinghouse Owners Group Response to Item I.C.1 of NUREG-0737"

11. S. S. Hanauer (NRC) letter to R. A. Newton (WE), December 17, 1980, request for a basis document for the emergency procedure guidelines.

12. C. W. Fay (WE) letter to H. R. Denton (NRC), December 23, 1980, "Response to NUREG-0737, Schedule Requirements as Related to Point Beach Nuclear Plant, Units 1 and 2"

13. C. W. Fay (WE) letter to H. R. Denton (NRC), January 9, 1981, "Additional Response to NUREG-0737"

14. R. W. Jurgensen (WOG) letter to S. S. Hanauer (NRC), OG-47, January 28, 1981, "Emergency Operating Instruction Background Documents"

15. C. W. Fay (WE) letter to H. R. Denton (NRC), February 4, 1981, "Technical Specification Change Request No. 65"

16. C. W. Fay (WE) letter to H. R. Denton (NRC), February 23, 1981, "Additional Response to NUREG-0737"

17. C. W. Fay (WE) letter to H. R. Denton (NRC), February 23, 1981, "Duty and Call Technical Advisor Training"

18. C. W. Fay (WE) letter to H. R. Denton (NRC), March 4, 1981, "NUREG-0737 Schedule Requirements"

19. R. W. Jurgensen (WOG) letter to J. R. Miller (NRC), OG-52, March 13, 1981, WCAP-9804, "Probabilistic Analysis and Operational Data in Response to Item II.K.3.2 for Westinghouse NSSS Plants"

20. R. W. Jurgensen (WOG) letter to S. S. Hanauer (NRC), OG-54, March 18, 1980, "Westinghouse Owners Group Update on Item I.C.1 of NUREG-0737 Activities"

ATTACHMENT

Revision 0
03-16-81

POINT BEACH NUCLEAR PLANT

MITIGATING CORE DAMAGE TRAINING PROGRAM

1.0 PURPOSE

The purpose of this document is to establish a mitigating core damage training program for Point Beach Nuclear Plant. This program is intended to meet the requirements for mitigating core damage training as addressed in the March 28, 1980, Denton letter and further defined by NUREG's 0660 and 0737.

2.0 OBJECTIVE

As a result of the accident at Three Mile Island, the NRC concluded that, in general, plant operating staff and management lacked knowledge and expertise in the methods to mitigate core damage. Based on that conclusion, the NRC now requires that plant personnel with responsibilities involving mitigating core damage receive special training. This program will assist the operating staff in decision-making processes involving an accident resulting in core damage. The operator will develop the knowledge and skills necessary to constantly analyze integrated systems operations and readily recognize conditions during which the plant is more vulnerable to accident initiations.

The course material outlined in this program assumes the trainee to have prior training in reactor principles, heat transfer, fluid flow, and nuclear plant systems involved with reactor heat removal.

This program will also provide personnel holding positions listed in Table 1 the knowledge necessary to recognize conditions that could result or have resulted in core damage and to mitigate the consequences of such accidents.

3.0 PROGRAM

3.1 Part 1

Part 1 of this program was integrated into and completed as part of the licensed operator retraining program and consisted of approximately four contact hours of training and a quiz. A generic overview of the problems expected when operating a core that may have experienced damage and, in general, the actions that could be taken to determine the extent of and mitigate the consequences of the damage, were covered. In specific, the problems anticipated during a small break LOCA were emphasized. Text material developed by General Physics Corporation and information presented in the Westinghouse Duty & Call Technical Advisor accident analysis course provided the basis for this part of the program.

3.2 Part 2

Westinghouse has been contracted to provide the additional plant-specific mitigating core damage training. All training in this part of the program will be completed before October 1, 1981. It is anticipated that the course will entail approximately 40 contact hours of training.

A rough outline of the program is listed below. Table 1 designates personnel and the particular portions of the training program they are to receive.

3.2.1 Course Introduction

a. Major plant assumptions

b. Core thermal and linear power density limits

3.2.2 Incore Instrumentation

a. System functions, characteristics, and operations including moveable incore detection system and incore thermocouples

b. Determination of core damage extent and core geometry changes

c. Determination of peak core temperatures

d. Methods of obtaining extended range readings

e. Direct readings at terminal junctions

f. System outputs and recorders

g. Potential causes of instrument failures and probable time to failure under various degraded conditions

3.2.3 Excore Instrumentation

a. Factors affecting excore instrumentation response during various operational conditions

b. Expected indications for various loss of coolant accidents

c. Determination of void formation in the core region

d. Detector reliability under adverse environmental conditions

3.2.4 Post-Accident Primary Chemistry

a. Expected changes in primary plant chemistry

b. Consequences of transferring primary water outside of containment

c. Long term system problems associated with extended immersion in contaminated primary water and potential failure mechanisms

d. Expected isotopic breakdowns for various conditions of fuel and cladding

3.2.5 Radiation Monitoring

a. Types or detectors utilized in the radiation monitoring system

b. Response of process and area monitors to radioactivity release

c. Verification of installed instrumentation through supplemental measurements

d. Determination of dose rates with nonfunctional or nonavailable instrumentation

3.2.6 Vital Process Instrumentation

a. Specific applications of major types of transmitters

b. Various failure methods and their reliability

c. Pressurizer pressure instrumentation

d. Steam generator level instrumentation

e. Various temperature detectors

f. Major flow indicators

g. Alternate methods to determine critical process variables

h. Use of plant computer stored information

3.2.7 Gas Generation

a. Physical and chemical characteristics and potential sources of major gases

b. Hydrogen flammability and explosion limits

c. Venting, disposal, and sampling methods of containment gases

3.2.8 Potentially Damaging Situations and Cooling Methods

a. Loss of feedwater induced loss of coolant accident

b. Heat removal paths and sinks

c. Steam and water cooling

d. Injection flowpaths - hot leg versus cold leg injection

e. Quenching effects on clad material

f. Gas or steam binding effects

g. Natural circulation indications and controls - one-phase and two-phase fluids

3.2.9 Course Summary

a. Course overview

b. Unanswered questions

TABLE 1

PLANT TRAINING REQUIREMENTS

	1.0 Course Introduction	2.0 Incore Instrumentation	3.0 Excore Instrumentation	4.0 Post-Accident Primary Chemistry	5.0 Radiation Monitoring	6.0 Vital Process Instrumentation	7.0 Gas Generation	8.0 Potentially Damaging Situations and Cooling Methods	9.0 Course Summary
Superintendent - Operations Shift Supervisor Senior Reactor Operator	X	X	X	X	X	X	X	X	X
Supt. - Maint. & Construction	X	a				X	X	X	X
Reactor Engineer and Supervisors	X	X	X			X	X	X	X
Manager - Nuclear Operations Plant General Superintendent	X	X	X	X	X	X	X	X	X
Duty & Call Superintendent	X	X	X	X	X	X	X	X	X
I & C Engineer, Supervisor and Technicians	X	a e-g	a, d		a	a-f			X
Health Physics Supervisors and Technicians	X			X	X				X
Chemistry Supervisors and Technicians	X			X	X				X
Reactor Operator	X	X	X	X	X	X	X	X	X
Duty Technical Advisor	X	X	X	X	X	X	X	X	X
Non-Licensed Operators	X	a,c,d	b		X	X	X	X	X

EMERGENCY CORE COOLING SYSTEM

OUTAGE REPORT FOR THE PERIOD

JANUARY 1976 TO DECEMBER 1980

Point Beach Nuclear Plant, Units 1 and 2

Wisconsin Electric Power Company

INTRODUCTION

A tabulation of all Emergency Core Cooling System (ECCS) equipment out of service at Point Beach Nuclear Plant, Units 1 and 2, from January 1976 to December 1980 has been compiled in response to Item II.K.3.17 of NUREG-0737. This tabulation includes the component(s) involved, cause of the outage, corrective action taken, length of time, and dates the component was out of service. This is in accordance with the "Five Additional TMI Requirements" letter issued in May 1980, and the "Clarification of TMI Action Plan Requirements" letter issued in September 1980.

The purpose of this tabulation is to provide a documentation of unavailability time for each of the ECCS essential components over the past five years.

SCOPE

The majority of the data for this tabulation was taken from the plant Maintenance Request and test records. Based on these records and backup information from Licensee Event Reports, Significant Operating Event Reports, Machinery History Records, Station Logs, and Modification Requests, the tabulation (Tables 1 through 10) was compiled which describes the component, reference for the outage, cause of the outage, corrective action taken, date, and length of time which the equipment was out of service.

Point Beach Nuclear Plant Technical Specification 15.4, "Surveillance Requirements", provides for testing, calibration or inspection of those systems or components whose functioning is required for continued, safe operation of the plant. Beginning in September 1977, in-service testing of pumps and valves was initiated to assess the operational readiness of safety-related components (Table 11). These tests are required by Technical Specifications and are in accordance with ASME Code, Section IX, IWP, Subsection 1100, "In-Service Testing of Pumps and In-Service Testing of Valves in Nuclear Power Plants." Prior to the "In-Service Test", Technical Specification tests were performed (Table 12).

Lengths of outages, where not documented, were based on estimates of hours needed to isolate the system; perform the maintenance, test, or corrective action; and restore the system to operational status.

All of the test and maintenance procedures and results are available at the Point Beach Nuclear Plant site.

Excluded were tests and maintenance done during scheduled outages, such as annual refueling outages, when the systems are removed from service as part of normal plant operations (cold shutdown).

The following systems and components are considered part of the ECCS and provided the basis for the tabulations:

1. Accumulators;

2. High head safety injection system;

3. Residual heat removal (low head) system;

4. Containment sump;

5. Boric acid storage tanks;

6. Refueling water storage tank;

7. Containment spray system;

8. Auxiliary coolant system; and

9. Service water system.

Non-essential components and instrumentation were excluded from the tabulation since their loss of service can in no way adversely affect the capability of the ECCS to perform its intended safety functions.

SYSTEM DESCRIPTION

The ECCS provides borated water to cool the core and insert negative reactivity by injection into the cold legs of the reactor coolant loops (Figure 1). The system uses two passive accumulators and two high pressure safety injection pumps. The high pressure safety injection may also be directed over the top of the core via injection through core deluge nozzles. The two residual heat removal (RHR) pumps also function as low pressure safety injection pumps to provide high volume/low pressure injection into the reactor coolant system via the core deluge nozzles. The boric acid storage tanks and refueling water storage tanks provide the sources of borated water. The auxiliary coolant system provides component cooling water and heat removal from recirculated primary water via the RHR heat exchangers. The service water system is the circulating water system which removes this heat to the environment. These systems can operate in either the injection or recirculation phases.

The containment spray system provides a spray of cooled, chemically treated, borated water to the containment atmosphere to provide iodine removal capacity and to back up the containment air recirculation cooling system.

Each unit at the Point Beach Nuclear Plant is equipped with a separate and independent ECCS. There is a cross-connection between the two systems at the boric acid storage tanks to allow the two units to share a third, spare boric acid storage tank. The following system description is applicable to either unit:

Accumulators

Under normal operating conditions, the two accumulators, Figures 2 and 3, are isolated from the Reactor Coolant System (RCS) by way of two check valves in series. The contents of each accumulator (borated water at greater than 2,000 parts per million) is pressurized to 750 psi by nitrogen gas.

Should RCS pressure fall below accumulator pressure, the check valves open and borated water is forced into the RCS. No external power or signal is necessary to cause actuation of the system.

Connections for drawing a local sample of the tank contents and remote draining/filling of the fluid space are provided. Instrumentation includes level, pressure and the alarms associated with these parameters.

High Head Safety Injection

The high head safety injection system, Figures 2 and 4, includes two horizontal, centrifugal, motor-driven pumps having a shutoff head of approximately 1,500 psi. At the pump suctions is a boric acid storage tank that contains a highly concentrated solution of boric acid to provide additional shutdown margin for an accident (especially a steam break in which the RCS cools down rapidly). At the discharge of each pump is a minimum bypass orifice to permit recirculation back to the refueling water storage tank (RWST) in the event the pumps are started with the normal flow paths blocked. The pump seals are cooled by the auxiliary coolant system.

Instrumentation for the system includes local and remote pressure and flow indication. Also included in the system is a sample connection, a drain connection, and a test line.

Residual Heat Removal System (Low Head Safety Injection)

The two residual heat removal (low head) pumps are horizontal, centrifugal type, each driven by an electric motor. The functions of the system, Figures 2 and 5, are to provide decay heat removal from the RCS via recirculation during normal cooldown and shutdown, low head safety injection to the RCS, suction head to the high head safety injection pumps and containment spray pumps during recirculation. Borated water for injection is obtained from the RWST. Borated water for recirculation is obtained either directly from the RCS or from the containment sump (Figures 2 and 6). Cooling of the fluid during recirculation is accomplished by way of the residual heat exchangers. These heat exchangers are, in turn, cooled by the auxiliary coolant system.

Instrumentation for the system includes local and remote pressure, temperature, and flow indication. Also included are cross-connection lines to the high head safety injection and containment spray systems.

Boric Acid Storage Tanks

Three boric acid storage tanks (Figures 2 and 7) are provided. One of the tanks supplies the initial source of boric acid solution (11.5-12.5 percent by weight) for injection into the RCS following the generation of a safety injection signal. Using one tank per unit leaves the third tank as a standby. Temperature of each tank is maintained at 165°F by two electric immersion heaters located at the bottom of the tank.

Instrumentation for the system includes temperature and level indication and alarms. Also included in the system are the cross-connection piping and isolation valves.

Refueling Water Storage Tank

One function of the refueling water storage tank (RWST), Figures 2 and 8, is to store and supply borated water to the refueling canal for refueling operations. It also provides borated water to the safety injection pumps, residual heat removal pumps, and the containment spray pumps for either a loss-of-coolant accident or a steam break accident. (During normal plant operations, the tank is aligned to the above pumps.)

The RWST contains 275,000 gallons minimum. The water in the tank is borated to a concentration of >2,000 ppm. Heaters are provided to prevent freezing of tank contents during cold weather and the tank is protected from wind chill by insulation and is located within the containment facade.

Instrumentation is provided to monitor tank temperature and level. An alarm circuit is provided for low level conditions. Penetrations to the tank include a local sample connection, the instrumentation, a drain connection, an overflow, and vent path.

Containment Spray System

The containment spray system contains two spray pumps (horizontal, centrifugal, motor driven), two liquid eductors, one spray additive tank, and two spray ring headers and nozzles and associated valves (Figures 2 and 9).

The pumps take a suction from the RWST during the initial phase of safety injection. They pump borated water into the spray header to reduce containment pressure. They are also used to spray NaOH into the containment to aid in the removal of air-borne iodine. This is accomplished by use of the spray eductors. NaOH is stored in the Spray Additive Tank and through entrainment the NaOH is introduced into the borated water and eventually into the containment. The RHR pumps supply the flow to the suction of the containment spray pumps during recirculation. The operation is terminated when the level in the Spray Additive Tank reaches the point indicating enough NaOH solution has been added to the containment for required sump chemistry.

The Spray Additive Tank has a drain connection and a sample connection as well as a level detector. The entire system is equipped with pressure and flow detectors and the instrumentation necessary for these detectors.

Cooling Water Systems

A. Auxiliary Coolant System

During the recirculation mode, the auxiliary coolant system is used to cool the recirculation fluid as it passes through the residual heat exchanger.

One of the two component cooling pumps and one of the component heat exchangers is sufficient to provide the core and containment cooling function during recirculation.

B. Service Water System (Common to Both Units)

The service water system is provided with a ring header and valves such that the auxiliary coolant heat exchangers, which are supplied with service water for cooling, can have flow directed to them from either side of the header. Three of the six service water pumps are required to operate during the recirculation phase to cool the recirculation flow and containment atmosphere in the unit suffering the accident and provide the necessary cooling for the other unit.

SYSTEM ACTUATION

Safety Injection System Actuation

Safety injection will be initiated in the event of a loss-of-coolant accident (LOCA) or a steam line break accident from the signals generated by the following parameters:

1.	Low Pressurizer Pressure	$\leq$1,715 psig
2.	High Containment Pressure (Hi)	$\geq$ 6 psig
3.	Low Steam Line Pressure - Loop A	$\leq$ 500 psig
4.	Low Steam Line Pressure - Loop B	$\leq$ 500 psig

The accidents listed above will result in a decrease in pressurizer pressure and an increase in containment pressure. The decrease in pressurizer pressure is brought about by the loss-of-coolant from the RCS to the containment, which in turn increases the containment pressure (thereby acting as a backup to the low pressurizer signal).

A steam line break will also decrease RCS pressure and temperature due to the rapid removal of RCS heat. The steam emitted into the containment will increase containment pressure, and, as before, this provides a backup signal for the system.

Containment Spray Actuation

Containment spray will be actuated upon receipt of a containment high pressure signal (Hi-Hi). This actuates at a higher pressure than safety injection (50 percent of design pressure versus 10 percent for safety injection). To prevent spurious actuation of spray, it will only be initiated on sensing a "Hi-Hi" containment pressure condition by both channels in two-out-of-three containment pressure signals provided for its actuation.

LIST OF FIGURES

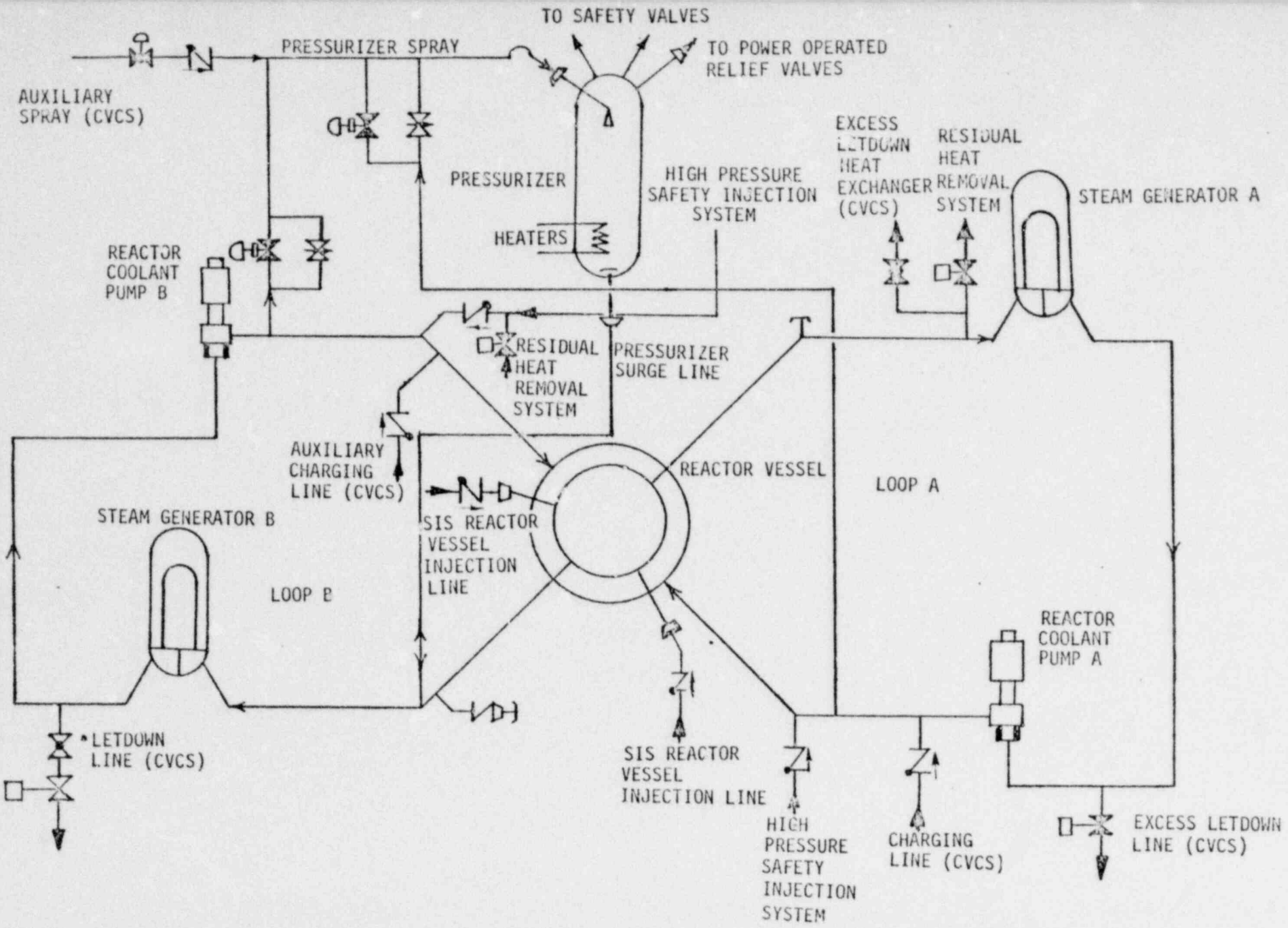


Figure 1 - PBNP REACTOR COOLANT SYSTEM FLOW DIAGRAM

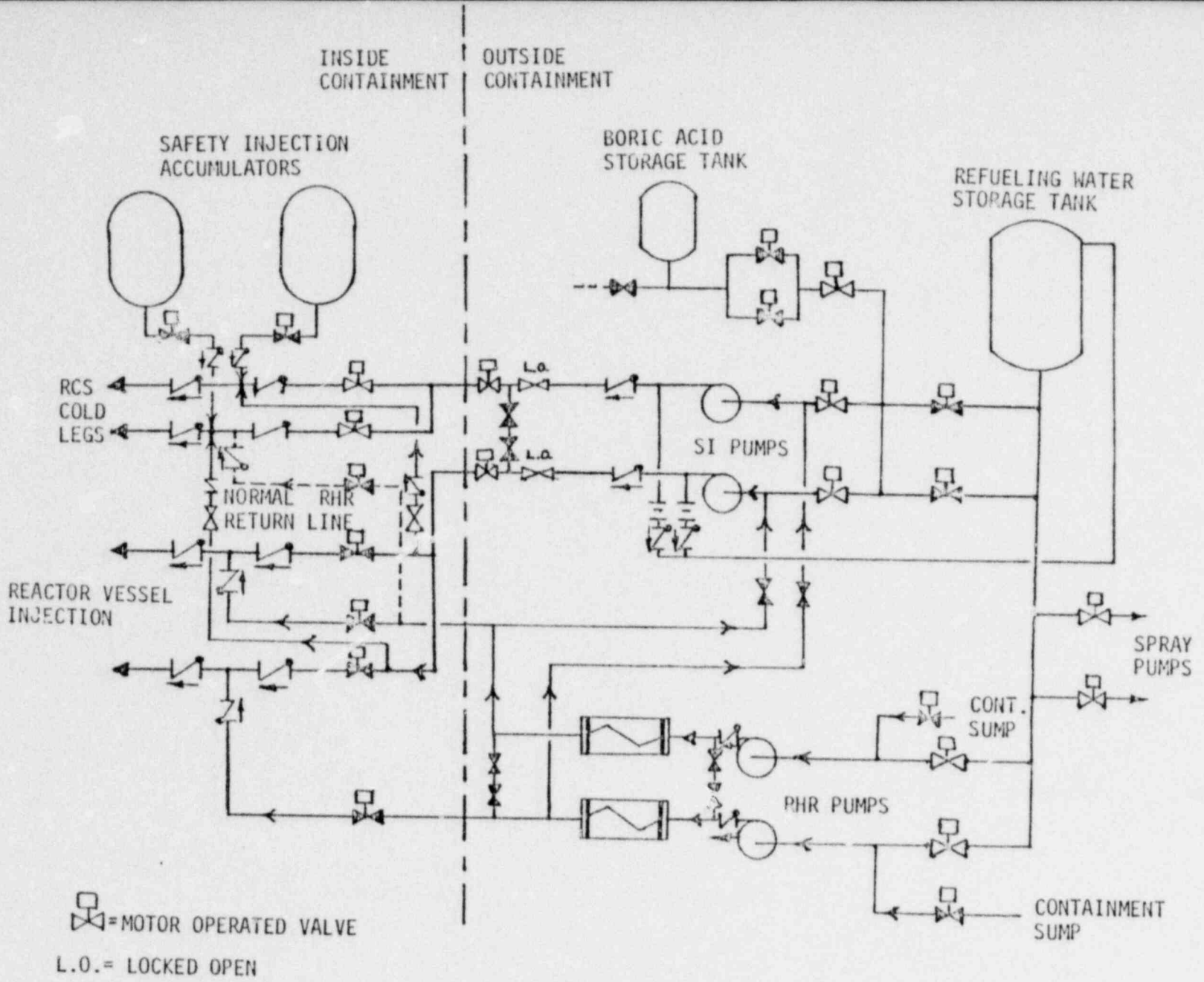


Figure 2 - PBNP SAFETY INJECTION SYSTEM SCHEMATIC

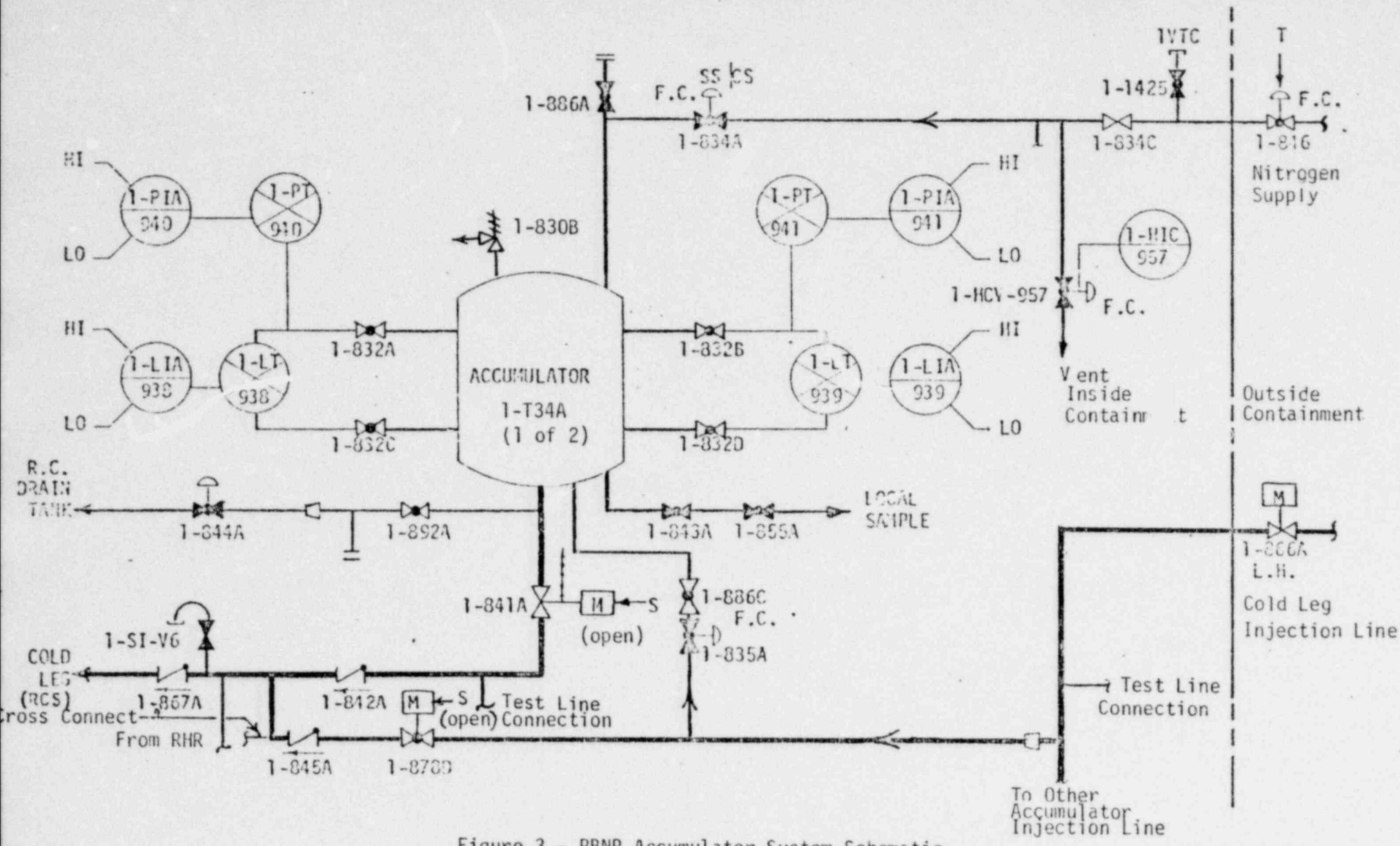


Figure 3 - PBNP Accumulator System Schematic

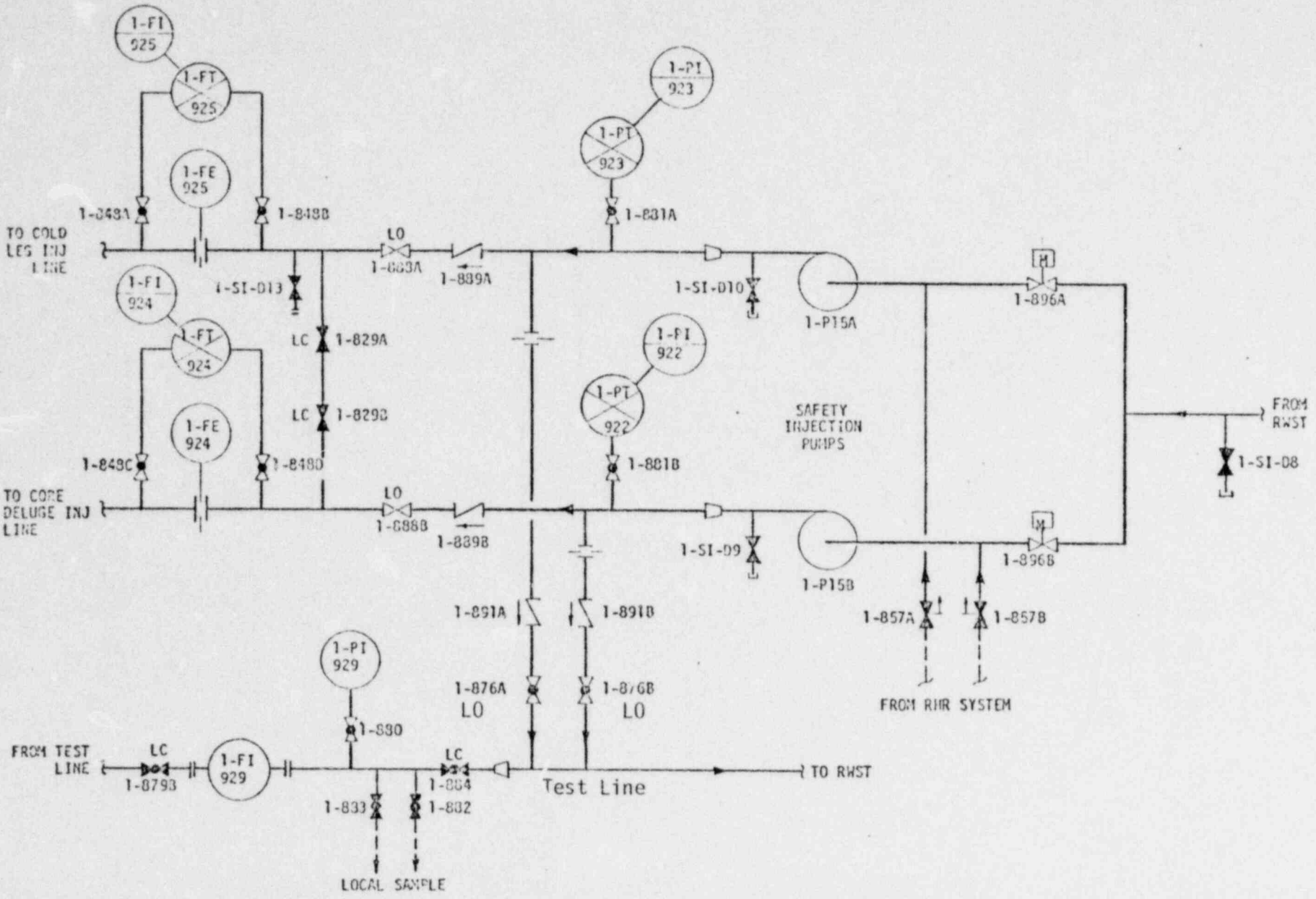


Figure 4 - PBNP High Head Safety Injection System Schematic

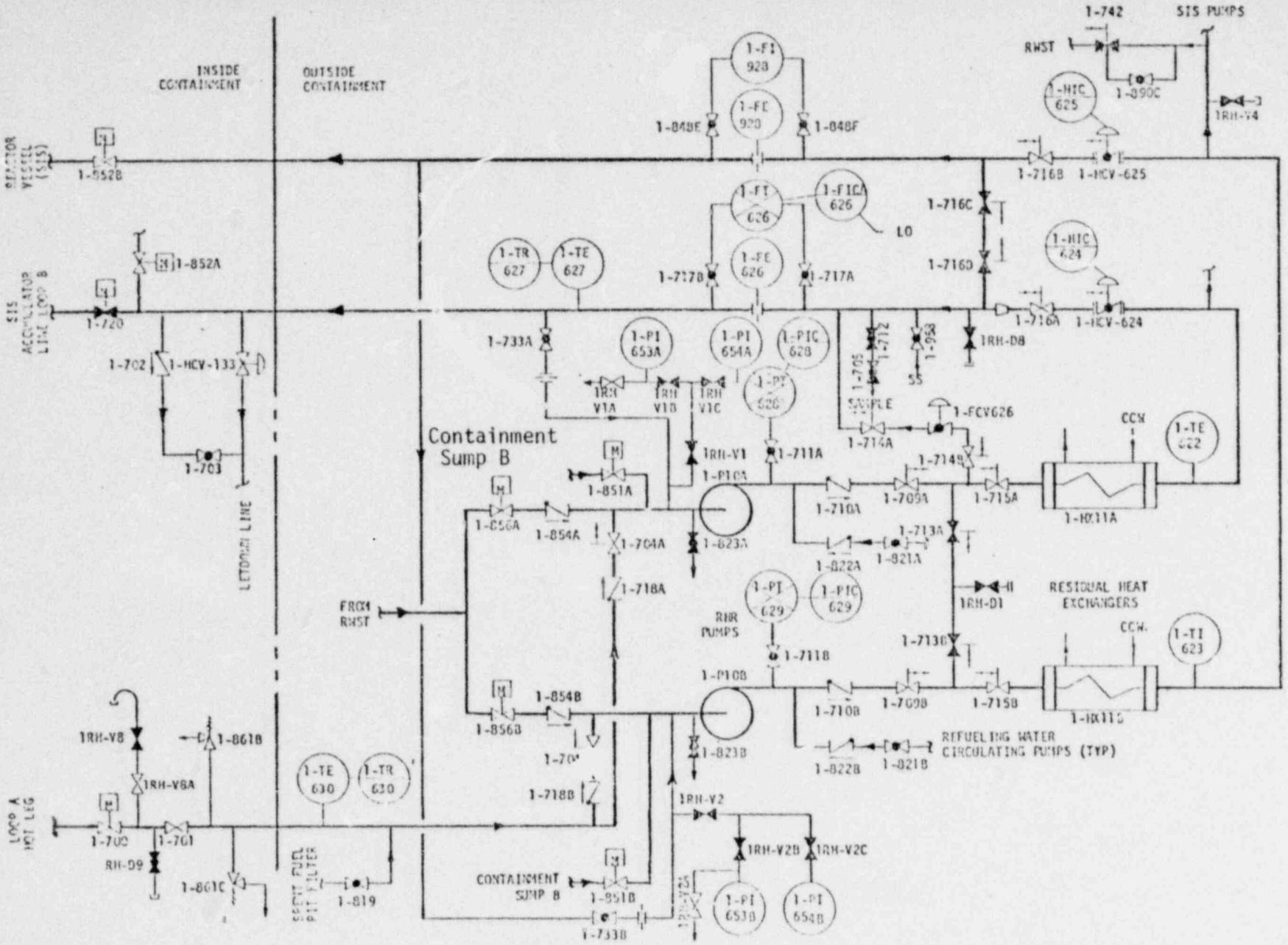


Figure 5 - PBNP Residual Heat Removal System Schematic

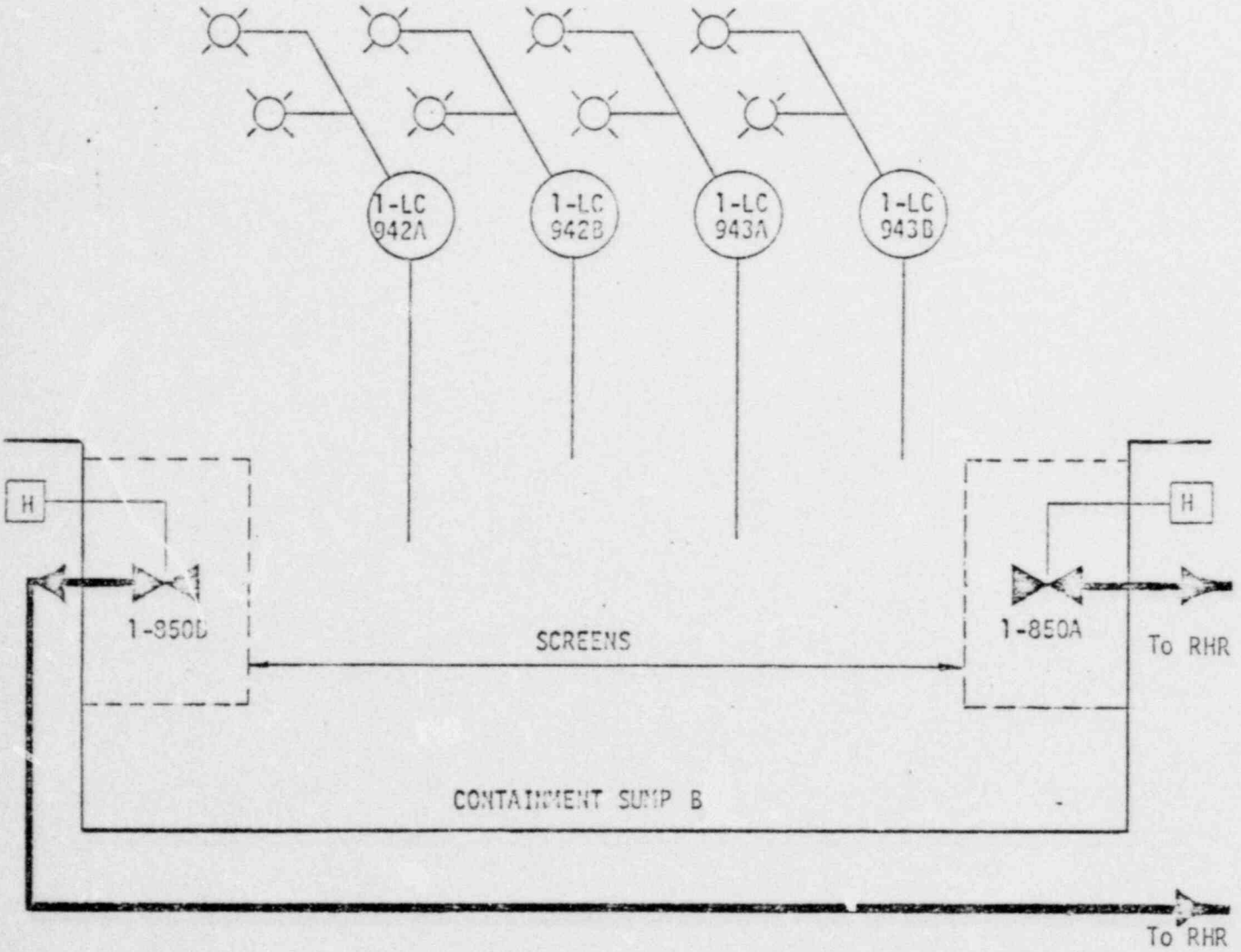


Figure 6 - PRNP Containment Sump Schematic

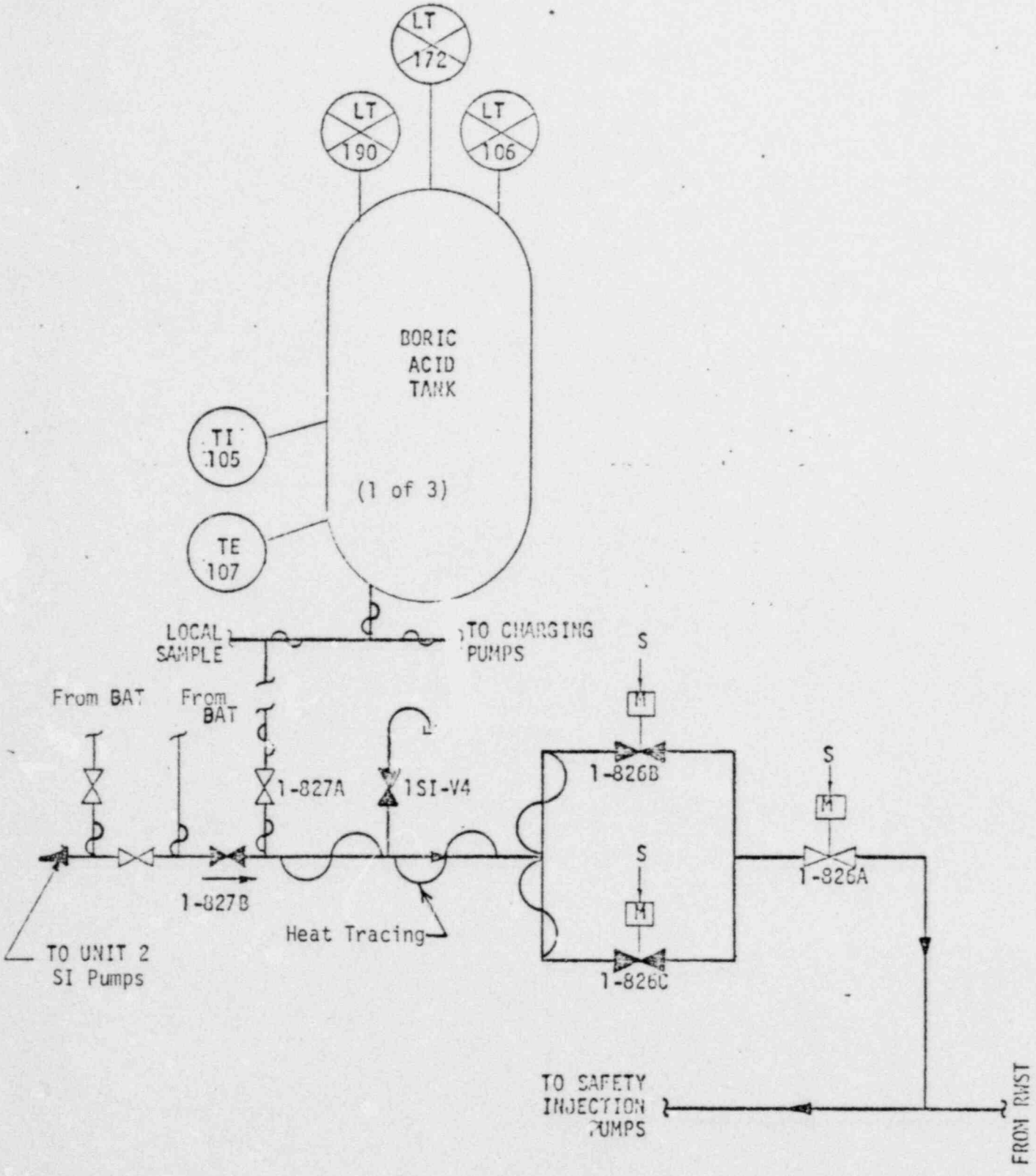


Figure 7 - PBNP Boric Acid Storage Tank Schematic

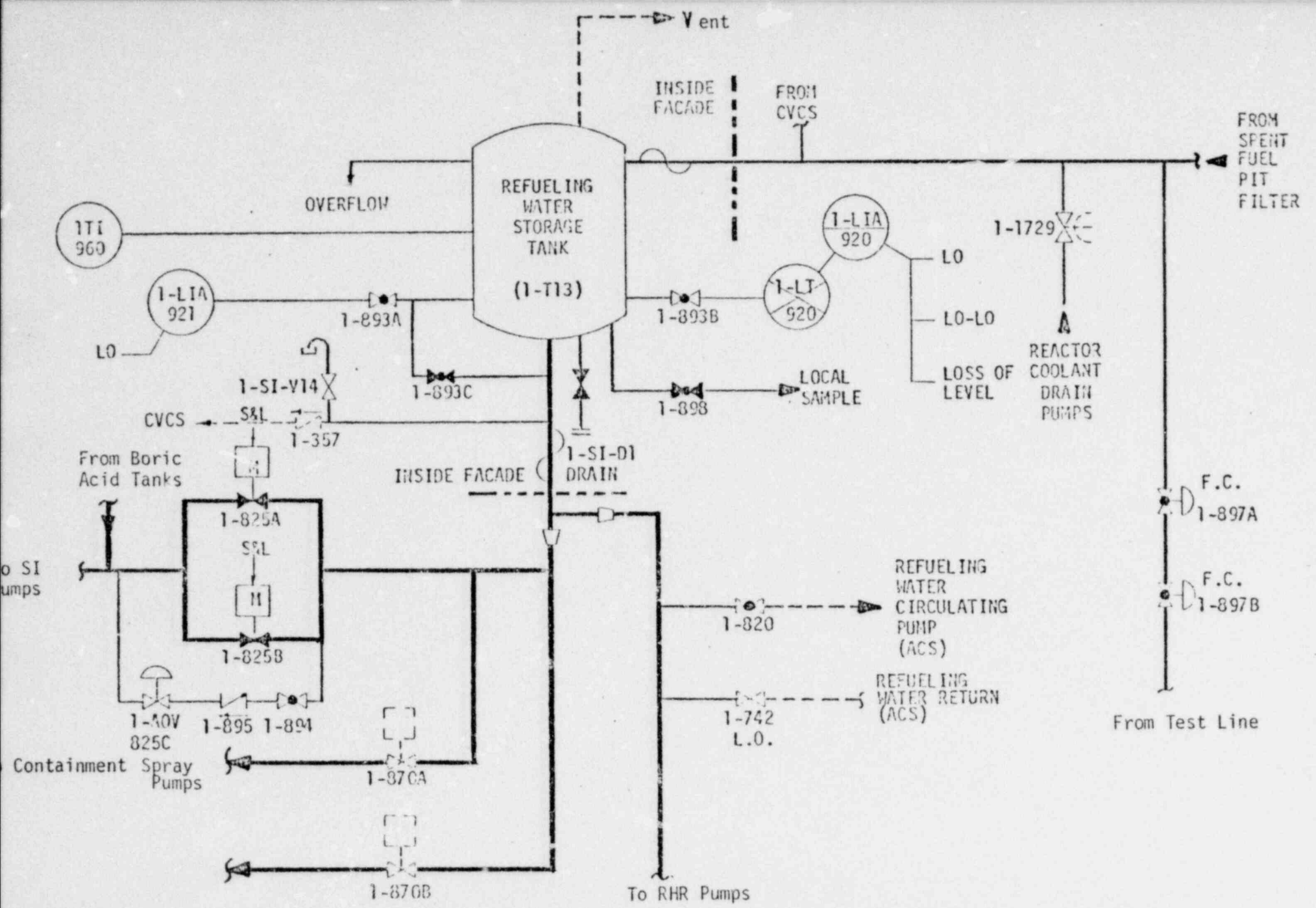


Figure 8 - PBNP Refueling Water Storage Tank Schematic

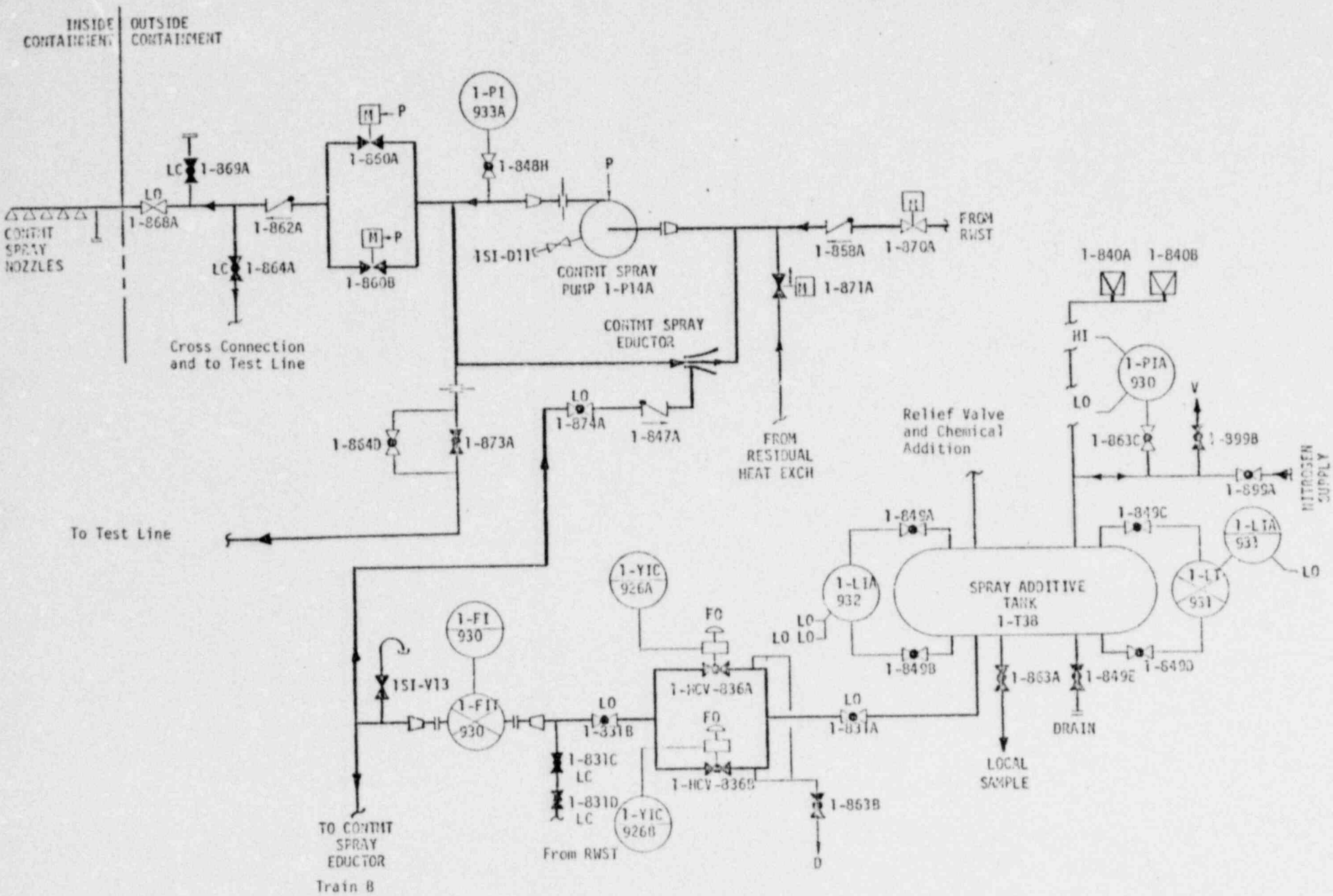


Figure 9 - PBNP Containment Spray System Schematic (showing Train A only)

KEY TO FIGURES


NORMALLY OPEN

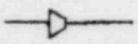

NORMALLY CLOSED

GATE VALVE

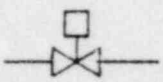

GLOBE VALVE


NEEDLE VALVE

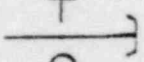

CHECK VALVE

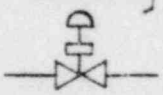

REDUCER

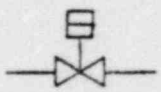

AIR DIAPHRAGM OPERATOR


ELECTRICAL MOTOR OPERATOR

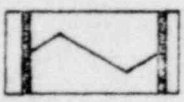

SAFETY RELIEF VALVE


CAPPED PIPE


PROPORTIONAL CONTROLLED AIR OPERATOR


PISTON OPERATOR

BLIND FLANGE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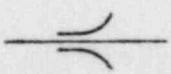
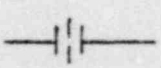
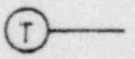
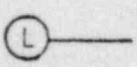

FLOW RESTRICTOR


FLOW RESTRICTION ORIFICE

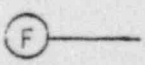

SAUNDERS PATENT DIAPHRAGM VALVE



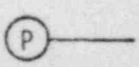
TEMPERATURE INDICATOR



LEVEL INDICATOR



FLOW INDICATOR



PRESSURE INDICATOR

LIST OF TABLES

8-2 Residual Heat Removal Pumps - Unit 2

9. COMPONENT COOLING WATER PUMPS TEST AND ROUTINE MAINTENANCE OUTAGES

9-1 Component Cooling Water Pumps - Unit 1

9-2 Component Cooling Water Pumps - Unit 2

10. SERVICE WATER PUMPS TEST AND ROUTINE MAINTENANCE OUTAGES - UNIT 1 AND 2

11. INSERVICE TEST OUTAGES

12. TECHNICAL SPECIFICATION SURVEILLANCE TEST OUTAGES

13. SERVICE WATER PUMPS PERIODIC CHECK TEST OUTAGES

REFERENCES

Tables 1 thru 6 System and Equipment Maintenance Outage Data is tabulated from the following sources:

Maintenance Requests (XXXXX)

Modification Requests (M-XXX)

Licensee Event Reports (LER-YR-OXX)

Significant Operating Event Reports (SOE-YR-OXX)

Westinghouse Drawing Number 1,0E017

Sheet 1 of 3, Revision 22

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Machinery Histories

Technical Specifications

Station Logs

Annual Operating Reports

Tables 7 thru 10 Test and Routine Maintenance Outage Data is tabulated from the following sources:

Call-up Cards-High Head Safety Injection Pumps (Table 7)

Call-up Cards - Residual Heat Removal Pumps (Table 8)

Call-up Cards - Component Cooling Water Pumps (Table 9)

Call-up Cards - Service Water Pumps (Table 10)

Table 11 Inservice Test Outage Data is tabulated from the Operations Department. These tests are required by Technical Specifications and are in accordance with ASME Code, Section IX, IWP, Subsection 1100. Source data for this table is at the beginning of Table 11 and lists the tests used to compile the data.

Table 12 Technical Specification Surveillance Test Outage Data is tabulated from the Operations Department. Source data for this table is at the beginning of Table 12 and lists the tests used to compile the data.

Table 13 Periodic Check Outages for Service Water Pumps Data is tabulated from Periodic Check No. 16 (PC-16).

CONCLUSION

In accordance with the "Clarification of TMI Action Plan Requirements" letter issued by the NRC in September of 1980, all of the outage data was reviewed to determine if any changes could be made to improve unavailability time of the Emergency Core Cooling System Equipment.

The results of this review have determined that there was no significant trend of breakdowns or replacements for any of the components in the Emergency Core Cooling System. There was also no indication that a problem existed for any of the common components in the system. It has also been determined that the testing program is adequate and assists in identifying possible problem areas.

TABLE 1

HIGH HEAD SAFETY INJECTION SYSTEM MAINTENANCE OUTAGES

1-1(2) Accummulators and Injection Lines in Containment - Unit 1

Component	Ref	Cause of Outage	Corrective Action	Dates and Length
NONE				

TABLE 1

1-1(b) Refueling Water Storage Tank - Unit 1

Component	Ref	Cause of Outage	Corrective Action	Dates and Length
MVO-825B SI pump suction from RWST	25919	After valve remains shut for a period of time it will not open. Only an intermediate position indication is received.	Increased "open" torque setting	2/25/80 9 hr
MOV-825B	22025	Failed to open completely on first test attempt	Checked torque setting and cycled valve	1/10/79 5 hr
MOV-825B	15407	Packing leak	Replaced valve stem, tightened packing as much as possible, took current readings	1/30/76 15 hr
MOV-825A	15406	Packing leak	Repacked stem, tightened packing	1/30/76 14 hr
MOV-856B	19277	Will not open on first attempt	Lubricated stem	6/23/77 5 hr*
MOV-856B	19521	Valve does not open without manual assistance	Increased torque setting on opening torque switch	6/5/78 6 hr*
MOV-870A RWST to Containment Spray	14699	Bevel gear housing cover hold down/-lifting stud broken off	Removed broken studs and replaced with steel bolts	2/4/76 9 hr
New AOV added to SI line between valve 894 and check valve 895	M-129	Valve should be added and controlled such that when 826B and C leave the shut condition the AOV will shut.	Completed and functional test	9/4/79 8 hr
MOV-856B	(SOE-80 -002)	Only opened 20% during testing	Cycled shut and then opened okay	4/26/76 4 hr*

*No outage required for maintenance work

TABLE 1

1-1(c) High Head Safety Injection Pumps and Related Injection Lines Outside of Containment - Unit 1

Component	Ref	Cause of Outage	Corrective Action	Dates and Lengtn
889A SI pump check valve	17646	Plugged up - no water will flow through	Pressurized with air to free drain	12/18/76 6 hr*
MOV-896A	14699	Bevel gear housing cover hold down/-lirting stud broken off	Removed broken studs. Replaced with 3/8 in socket head steel bolts	2/4/76 9 hr
MOV-866A SI Pump discharge on cold leg injection line	19502	Needs repacking	Repacked	11/12/77 6.5 hr
MOV-866B	19502	Needs packing adjusted or repacking	Repacked with 187I	11/21/77 8.0 hr

*No outage required for maintenance work

TABLE I

1-2(a) Accummulators and Injection Lines in Containment - Unit 2

Component	Ref	Cause of Outage	Corrective Action	Dates and Length
DV-878D	18521	Worm never ground, defective, needs replacing	Worm replaced with a new ground one	4/30/78 14 hr
DV-878D	23871	Electric interlock prevents valve from stroking	Adjusted "open" limit switch	4/7/79 4.5 hr*

* No outage required for maintenance work.

TABLE 1

1-2(b) Refueling Water Storage Tank - Unit 2

Component	Ref	Cause of Outage	Corrective Action	Dates and Length
DV-856A HR Pump uction from WST	18122	Valve motor overheated and tripped breaker motor was very hot	Tightened stem nut, lock nut, replaced gaskets on handwheel mechanism. Adjusted torque	5/15/77 9 hr
DV-870A ontainment pray pump uction from WST	21346	Packing leak	Repacked with 187I and 1625	4/16/79 7 hr
	24719	Packing leak	Repacked with 187I and 1625. Moved lantern ring off bottom of valve for better packing seal	4/22/80 7 hr

TABLE 1

1-2(c) High Head Safety Injection Pumps and Related Injection Lines Outside of Containment - Unit 2

Component	Ref	Cause of Outage	Corrective Action	Dates and Length
P15B "B" SI Pump	SOE-77-007	Found rough motor bearing	Inspected - found oil ring improperly installed. Replaced bearing	4/17/77 14 hr
RV-887 Relief Valve	21958	Repair and test	Relapped and cut nozzle and disc seats. Installed new bellows protection to body and gasket. Set lift pressure at 1,745 psi. Leak test ok	9/1/79 14 hr
FE-924 Flange orifice	15909	Leak at flow orifice for core deluge	Replaced with new flexatallic gaskets and retorqued	7/28/76 7 hr
RV-887	M-172	Require upgrading of valve to raise design pressure of SI	Installed new relief valve, rebuilt relief for new set pressure	10/11/76 not available
P15A "A" SI Pump	27857 LER-80-010	Sheared coupling and keys	Replaced pump rotating assembly, replaced motor rotor coupling and assembly	11/17/80 36 total hr U.2 H.S.D 12 hr
P15A "A" SI Pump	28178	Outboard end overheated and started to leak	Installed new shaft sleeve and seal	12/3/80 9 hr

TABLE 2

LOW HEAD SAFETY INJECTION SYSTEM MAINTENANCE OUTAGES

2-1 Low Head Safety Injection System - Unit 1

Component	Ref	Cause of Outage	Corrective Action	Dates and Length
FCV-626 RHR Hx Bypass	19425	Leaks through with air in service	Readjusted travel on stem for closing	2/26/79 6 hr*
	27618	Fix a bad leak inside the cover of the valve positioner	Replaced valve stem and parts	9/18/80 4.5 hr
HCV-624# Hx "A" Flow Control Valve	19288	With 50% set on the controller, the valve is only 10% open	Adjusted I/P and limit switch. Stroked valve	7/5/77 4.5 hr
Air Regulator for HCV-625#	15475	Regulator has a ruptured diaphragm	Replaced diaphragm, installed missing retaining rings	2/17/76 4.5 hr
MOV-701 RHR Suction Isolation Valve	16186	Has a leak	Installed new gasket	11/8/77 14 hr
704A Manual Suction Valve from Loop A Hot Leg	18923	Packing leak	Repacked	11/29/77 9 hr
MOV-850B	24759 SOE-80-002	Did not open during testing	Changed PH directional valve	2/5/80 9 hr
MOV-851B Sump "B" to B RHR Pump	18927	Oil leak where the valve stem enters the motor operator and packing leak in the RHR pump suction valve gallery	Packed with 1625 and 1871	11/30/77 9 hr
Crosby 3XLX4 RHR Safety Valve	M-455	Setpoint of the RHR safety valve should be changed from 625 psig to 500 psig. Change requires removing spring, verifying new set point and changing name	Change of valve springs, valve spring washers, reassembly of the valve, readjustment of setpoint and tested	6/5/78 21.5 hr

*No outage required for maintenance work

#Maintenance data lists this valve as an HCV. Westinghouse drawing reference lists valve as FCV.

TABLL 2

2-1 Low Head Safety Injection System - Unit 1

Component	Ref	Cause of Outage	Corrective Action	Dates and Length
CV-625* HR Heat Exchanger Outlet	19288	With the controller set at 50%, the valve is only 20% open	Adjusted I/P and limit switch.	7/5/77 4.5 hr
CV-625*	25963	Doesn't stroke properly	Slight adjustment of zero	8/7/80 4.5 hr
CV-625*	25287	Doesn't have full stroke capacity	Adjust I/P and stroked valve	10/4/79 4.5 hr

*Maintenance data lists this valve as an HCV. Westinghouse drawing reference lists valve as FCV.

TABLE 2

2-2 Low Head Safety Injection System - Unit 2

Component	Ref	Cause of Outage	Corrective Action	Dates and Length
CV-624#	22171	Only opens 70% checked limit switch arm movement	Checked I/P and stroke status	4/18/79 4.25 hr
CV-625#	22214	Flange leak	Changed gasket and added new packing	4/18/79 9 hr*
04A HR Hot Leg ection Line	21320	Packing leak	Repacked with 187I and grafoil	4/16/79 9 hr
17A	21323	Flange leaks	Replaced flange gasket	4/17/79 6.5 hr
17B	21323	Flange leaks	Replaced flange gasket	4/17/79 6.5 hr
DV-850B	SOE-80-006	Valve failed to stroke during testing by control room actuation	Valve opened and closed using manual back up. Electrical repaired - replaced with new valve	7/19/80 4 hr
MV-351B	16221 SOE-77-008	Breaker trips after 15 sec	Cycled valve and adjusted torque setting	7/14/77 5 hr
rosby XLX4 RHR afety valve	M-456	Set point of the RHR safety valve to be changed from 625 psig to 500 psig. Change required removing spring, verifying new set point and changing name	Change of valve springs, valve spring washers, reassembly of valve, readjustment of set point and tested	6/5/78 11.5 hr

*Maintenance data lists this valve as an HCV. Westinghouse drawing reference lists valve as FCV.

TABLE 3

CONTAINMENT SPRAY SYSTEM MAINTENANCE OUTAGES

3-1 Containment Spray System - Unit 1

Component	Ref	Cause of Outage	Corrective Action	Dates and Length
14B	21374	Breaker has a badly bent latch lever and lever bracket	Racked out breaker and straightened latch lever and lever bracket. Racked breaker back in	6/30/78 7 hr
OV-860B	15391	During test closing of valve, breaker tripped on overload. After resetting breaker, manual cycling of valve was difficult.	Inspected, found valve stem dry. Lubed and stroked valve a few times	1/21/76 6 hr
ontainment pray Relay	LER-80-003	Relay would not latch during testing. The latching mechanism was misaligned	Readjusted latch and tested	3/18/80 4.5 hr

TABLE 3

3-2 Containment Spray System - Unit 2

Component	Ref	Cause of Outage	Corrective Action	Dates and Length
14A	26758 26598	Casing drain plug leaks	Put Teflon tape on plug and tightened	7/8/80 5 hr
	27208	Motor side flange leaks	Replaced flexitallic gasket	7/8/80 14 hr
CV-836B aOH additive	17216	Valve failed to travel full stroke, stops at 75%	Valve had numerous problems: 1. Valve has been swapped and labeled 874 (cv) 2. Found I/P reg. set at 60 psi reset at 20 3. Found valve reg. set at 30 psi reset to 70 4. Found valve stroke zero way off - reset 5. Found the open limit switch operating at 25% stroke. Reset to operate at 100% open	1/21/77 6.5 hr
OV-860C	LER- 78-005	Starter breaker overloads tripped	Reset	
OV-860C	20912 LER- 78-007	Breaker overloads and trips	Installed a new torque switch and adjusted torque setting on new switch	6/16/78 9 hr
FIT-930 pray additive low	22208	Inlet flange leak	Replaced flange seal	4/6/79 6 hr
T-930 pray additive ank flow ransmitter	13575	Transmitter has a flange leak	Replaced gasket and calibrated	3/10/77 4.5 hr

TABLE 4

COMPONENT COOLING WATER PUMPS MAINTENANCE OUTAGES

4-1 Component Cooling Water Pumps - Unit 1

Component	Ref	Cause of Outage	Corrective Action	Dates and Length
P11A "A" Component Cooling Pump	15653	Motor side leaks	Replaced motor side seal and bearing. Aligned motor to pump. Welded jacket screws to motor base to align motor	4/23/76 49 hr
	15291	Check pump for excessive thrust movement	Installed new QA bearing and oil seal	2/26/76 34 hr
	21654 and 21319	Outboard seal has excessive leakage	Installed new mechanical seal bearing and oil seal	8/17/78
	22528	Excessive seal leakage on outboard motor	Replaced seal and bearings	11/13/78 24 hr
P11B "B" Component Cooling Pump	24488	Outboard mechanical seal leaking	Replaced mechanical seal and outboard bearing	1/25/80 14 hr
724A Disch. Check Valve on 1P11A	21710	Valve failed to seat for 30 sec after pump was secured	Built up stop by welding. Disc was jamming on sides of valve	8/17/78 9 hr

TABLE 4

4-2 Component Cooling Water Pumps - Unit 2

Component	Ref	Cause of Outage	Corrective Action	Dates and Length
P11A "A" Component Cooling Pump	18772	Inboard seal leaks	Replaced bearing and mechanical seals	11/30/77 19 hr
	21569	Uses a lot of oil	Installed new auto-oiler and new piping to bearing cover. Drilled small vent hole in vent plug	7/14/78 8 hr
	20505	Inboard seal has excessive oil leak	Installed new oil seal	3/2/78 24 hr
	21291	Excessive end float in pump shaft. Replace bearing and oil seal	Installed new bearings and new mechanical seal	9/7/78 14 hr
	16579	Has excessive oil leakage on inboard bearing	Replaced inboard oil seal and put in a new mechanical seal	9/28/75 24 hr
P11B "B" Component Cooling Pump	27212	Noisy motor bearing	Cleaned motor and replaced bearing	6/26/80 14 hr
	21025	Excessive vibration of bearing	Replaced motor and pump bearing, ground impeller for balance. Replaced seals and gaskets	6/27/80 24 hr
	18780	Excessive vibration	Checked coupling alignment and found motor low. Shimmed 0.010" on motor	9/24/77 9 hr

TABLE 5

BORIC ACID STORAGE TANKS MAINTENANCE OUTAGES - UNIT 1 AND 2

Component	Ref	Cause of Outage	Corrective Action	Dates and Length
None				

TABLE 6

SERVICE WATER PUMPS MAINTENANCE OUTAGES - UNIT 1 AND 2

Component	Ref	Cause of Outage	Corrective Action	Dates and Length
32A	24438	Excessive seal leakage	Tightened packing and greased stuffing box	11/28/79 6 hr
32A	15790	Need to: dismantle, inspect, replace impellers, repack, stuffing box, test run and return to service	Replaced bronzed impellers with stainless steel and reassembled. Repacked stuffing box with grafoil	7/14/76 44 hr
32B	15790	Dismantle, inspect, replace impellers, repack stuffing box, test run and return to service	Replaced bronzed impellers with stainless steel and reassembled. Repacked stuffing box with grafoil	7/14/76 54 hr
mp discharge heck valve	19296	Appears to be stuck open	Post on valve disc worn. Made and installed new post	7/7/77 24 hr
32C	20116	High vibration on pump motor	Analyzed by W vibration analysis group. No correction required	1/20/78 6 hr
32C	21567	Excessive vibration	W vibration analysis personnel brought onsite to evaluate the pump. No correction required.	11/3/78 7 hr
2C	21611	Upper bearing making a lot of noise	Replaced both upper thrust bearings	7/26/78 21.5 hr
mp discharge eck valve	19180	Stuck open when pump is secured pressure drops	Cleaned up bore in clapper arm made new disc post. Installed post with interface fit and seal welded on back side	6/10/77 14 hr

TABLE 7

HIGH HEAD SAFETY INJECTION PUMPS TEST AND ROUTINE MAINTENANCE OUTAGES

7-1 High Head Safety Injection Pumps - Unit 1

Pump	Procedure	Action Taken	Date	Time for Maintenance
P15A	Lubricate valve stem nuts of valves located in areas of safety injection pumps and spray pump area			
	Inspected motor bearings			
	Change pump bearing reservoir oil			
	Change coupling grease	Done	2/9/76	6 hr
		Done	1/17/76	6 hr
		Done	1/17/78	7 hr
		Done	1/10/79	5 hr
		Done	1/15/80	8 hr
		Done	10/29/76	15 hr
		Done	11/1/77	15 hr
		Done	10/10/79	30 hr
P15B	Lubricate valve stem nuts of valves located in areas of safety injection pumps and spray pump area			
	Inspect motor bearings			
	Change pump bearing reservoir oil			
	Change coupling grease	Done	2/9/76	6 hr
		Done	1/17/76	6 hr
		Done	1/17/78	7 hr
		Done	1/10/79	5 hr
		Done	1/15/80	8 hr
		Done	10/29/76	15 hr
		Done	11/1/77	15 hr
		Done	10/10/79	30 hr

TABLE 7

7-2 High Head Safety Injection Pumps - Unit 2

Pump	Procedure	Action Taken	Date	Time for Maintenance
P15A	Lubricate valve stem nuts of valves located in area of safety injection pumps and spray pump area Inspect motor bearings Change pump bearing reservoir oil Change coupling grease	Done	2/9/76	6 hr
		Done	1/17/76	6 hr
		Done	1/17/78	7 hr
		Done	1/10/79	5 hr
		Done	1/15/80	8 hr
		Done	4/2/77	10 hr
		Done	4/12/78	10 hr
		Done	4/28/80	10 hr
P15B	Lubricated valve stem nuts of valves located in areas of safety injection pumps and spray pump area Inspect motor bearings Change pump bearing reservoir oil Change coupling grease	Done	2/9/76	6 hr
		Done	1/17/76	6 hr
		Done	1/[illegible]/78	7 hr
		Done	1/10/79	5 hr
		Done	1/15/80	8 hr
		Done	4/2/77	10 hr
		Done	4/2/78	9 hr
		Done	4/23/80	9 hr

TABLE 8

RESIDUAL HEAT REMOVAL PUMPS TEST AND ROUTINE MAINTENANCE OUTAGES

8-1 Residual Heat Removal Pumps - Unit 1

Pump	Procedure	Action Taken	Date	Time for Maintenance
P10A	Change pump bearing oil Grease valve stem nuts Grease motor (remove drain plugs while greasing)	Done	10/30/76	5.5 hr
		Done	5/8/78	6 hr
		Done	2/5/79	5.5 hr
		Done	6/9/80	6 hr
		Done	2/5/79	5.5 hr
P10B	Change pump bearing oil Grease valve stem nuts Grease motors (Remove drain plugs while greasing)	Done	10/30/76	5.5 hr
		Done	5/8/78	6 hr
		Done	2/5/79	5.5 hr
		Done	6/9/80	6 hr
		Done	2/5/79	5.5 hr

TABLE 8

8-2 Residual Heat Removal Pumps - Unit 2

Pump	Procedure	Action Taken	Date	Time for Maintenance
P10A	Change pump bearing oil Grease valve stem nuts Grease motor (Remove drain plugs while greasing)			
		Done	7/19/77	5.5 hr
		Done	7/11/78	6 hr
		Done	2/5/79	6 hr
		Done	3/31/80	5 hr
		Done	2/5/79	5.5 hr
P10B	Change pump bearing oil Grease valve stem nuts Grease motor (Remove drain plugs while greasing)			
		Done	7/19/77	5.5 hr
		Done	7/11/78	6 hr
		Done	2/5/79	6 hr
		Done	3/31/80	5 hr
		Done	2/5/79	5.5 hr

TABLE 9

COMPONENT COOLING WATER PUMPS TEST AND ROUTINE MAINTENANCE OUTAGES

9-1 Component Cooling Water Pumps- Unit 1

Pump	Procedure	Action Taken	Date	Time for Maintenance
11A	Grease valve yoke nuts in whole area Lubricate coupling Drain and refill pump bearing housing Grease motor (Remove drain plugs while greasing)	Done	2/9/76	5.5 hr
		Done	2/9/77	5 hr
		Done	1/10/78	5 hr
		Done	1/10/79	6 hr
		Done	3/31/80	6 hr
		Done	1/15/79	6 hr
1B	Grease valve yoke nuts in whole area Lubricate coupling Drain and refill pump bearing housing Grease motor (Remove drain plugs while greasing)	Done	2/9/76	5.5 hr
		Done	2/9/77	5 hr
		Done	1/10/78	5 hr
		Done	1/10/79	6 hr
		Done	3/31/80	6 hr
		Done	1/15/79	6 hr

TABLE 9

9-2 Component Cooling Water Pumps - Unit 2

Pump	Procedure	Action Taken	Date	Time for Maintenance
P11A	Grease valve yoke nuts in whole area Lubricate coupling Drain and refill pump bearing housing Grease motor (Remove drain plugs while greasing)	Done	2/9/76	5.5 hr
		Done	2/9/77	5 hr
		Done	1/10/78	5 hr
		Done	1/15/79	6 hr
P11B	Grease valve yoke nuts in whole area Lubricate coupling Drain and refill pump bearing housing Grease motor (Remove drain plugs while greasing)	Done	2/9/76	5.5 hr
		Done	2/9/77	5 hr
		Done	1/10/78	5 hr
		Done	1/15/79	6 hr
		Done	3/31/80	6 hr
		Done	1/15/79	6 hr

TABLE 10

SERVICE WATER PUMPS TEST AND ROUTINE MAINTENANCE OUTAGES - UNIT 1 AND 2 SHEET 1 OF 1

Equipment	Procedure	Action Taken	Date	Time for Maintenance
P32A,B,C D,E,&F	Change oil in upper bearing	Done	10/26/76	8 hr
		Done	10/21/77	6 hr
		Done	9/30/78	6 hr
		Done	11/4/79	10 hr
		Done	9/2[illegible]/80	12 hr

TABLE 11
INSERVICE TEST OUTAGES

Index of Tests:

IT-01	High Head Safety Injection Pumps - Unit 1
IT-02	High Head Safety Injection Pumps - Unit 2
IT-03	Low Head Safety Injection Pumps - Unit 1
IT-04	Low Head Safety Injection Pumps - Unit 2
IT-05	Spray Pumps & Eductor Supply Check Valves 847A&B - Unit 1
IT-06	Spray Pumps & Eductor Supply Check Valves 847A&B - Unit 2
IT-07	Rotation of Service Water Pumps P32A,B,C,D,E
IT-30	Chemical and Volume Control Valves - Unit 1
IT-35	Chemical and Volume Control Valves - Unit 2
IT-40	Safety Injection Valves - Unit 1
IT-45	Safety Injection Valves - Unit 2
IT-50	Containment Spray Valves - Unit 1
IT-55	Containment Spray Valves - Unit 2

KEY:

\# Estimated times from control operators

* Total time for test run, does not include any line-up as per initial conditions. The +4 hrs takes into consideration line-up time.

CL-7A and 5A are valve position check lists used at Point Beach Nuclear Plant.

INSERVICE TEST OUTAGES

Inservice Test No. 01
(SIS is lined up as per CL-7A)

Test No.	Date	Train A OOS*	Train B OOS*
IT-01	1/27/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	2/24/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	3/24/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	4/29/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	5/26/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	6/23/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	7/28/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	8/26/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	10/12/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	10/27/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	11/24/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	12/22/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
Total Time OOS for 1978:		63 hrs	63 hrs
IT-01	1/26/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	2/23/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	3/23/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	4/27/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	5/25/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	6/29/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	7/27/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	8/26/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	9/28/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	10/20/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	11/24/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	12/29/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
Total Time OOS for 1979:		63 hrs	63 hrs
IT-01	1/25/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	2/22/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	4/5/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	4/27/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	5/24/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	7/1/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	8/12/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	8/15/80	no test	1.5 hrs
IT-01	9/3/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	10/3/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	10/31/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	12/1/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-01	12/27/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
Total Time OOS for 1980:		58 hrs	60.5 hrs

INSERVICE TEST OUTAGES

Inservice Test No. 02
(SIS is lined up as per CL-7A)

Test No.	Date	Train A OOS*	Train B OOS*
IT-02	1/27/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	2/24/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	3/28/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	4/16/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	4/29/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	5/26/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	6/23/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	7/28/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	8/26/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	9/22/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	10/27/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	11/24/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	12/22/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
Total Time OSS for 1978:		68.25 hrs	68.25 hrs
IT-02	1/26/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	2/23/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	3/23/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	4/11/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	4/27/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	5/25/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	6/29/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	7/27/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	8/26/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	9/28/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	10/26/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	11/24/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
Total Time OOS for 1979:		63 hrs	63 hrs
IT-02	1/25/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	2/8/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	2/22/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	3/22/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	5/10/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	5/24/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	7/1/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	8/2/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	9/2/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	10/3/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	10/31/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	11/17/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	11/18/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-02	12/2/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs

INSERVICE TEST OUTAGES

Inservice Test No. 02
(SIS is lined up as per CL-7A)

Test No.	Date	Train A OOS*	Train B OOS*
IT-02	12/3/80	1.25 hrs + 4 hrs	1.25 hrs + 8 hrs
Total Time OOS for 1980:		73.5 hrs	68.25 hrs

INSERVICE TEST OUTAGES

Inservice Test No. 03
(SIS is lined up as per CL-7A)

Test No.	Date	Train A OOS*	Train B OOS*
IT-03	1/13/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	1/27/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	2/10/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	2/24/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	3/10/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	4/14/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	5/8/78	no test	1.25 hrs≠ + 4 hrs
IT-03	5/12/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	6/9/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	7/14/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	8/11/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	9/8/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	9/11/78	no test	1.25 hrs≠ + 4 hrs
IT-03	9/13/78	no test	1.25 hrs≠ + 4 hrs
IT-03	9/13/78	1.25 hrs≠ + 4 hrs	no test
IT-03	11/10/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	12/8/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
Total Time OOS for 1978:		73.5 hrs	84.0 hrs
IT-03	1/12/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	2/9/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	3/9/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	4/13/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	5/11/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	6/15/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	7/13/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	8/19/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	9/7/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	10/9/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	11/20/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	12/9/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
Total Time OOS for 1979:		63 hrs	63 hrs
IT-03	1/11/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	2/8/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	2/23/80	no test	1.25 hrs≠ + 4 hrs
IT-03	4/5/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	4/11/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	5/3/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	5/20/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	6/21/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	7/25/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	8/22/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs

INSERVICE TEST OUTAGES

Inservice Test No. 03
(SIS is lined up as per CL-7A)

Test No.	Date	Train A OOS*	Train B OOS*
IT-03	9/26/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	10/25/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	11/23/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-03	12/28/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
Total Time OOS for 1980:		68.25 hrs	73.5 hrs

INSERVICE TEST OUTAGES

Inservice Test No. 04
(SIS is lined up as per CL-7A)

Test No.	Date	Train A OOS*	Train B OOS*
IT-04	1/12/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	2/10/78	1.25 hrs≠ + 4 hrs	no test
IT-04	2/10/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	2/10/78	1.25 hrs≠ + 4 hrs	no test
IT-04	3/10/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	4/16/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	4/29/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	5/9/78	1.25 hrs≠ + 4 hrs	no test
IT-04	5/12/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	6/9/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	7/14/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	7/15/78	no test	1.25 hrs≠ + 4 hrs
IT-04	8/11/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	9/8/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	10/13/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	11/10/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	12/8/78	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
Total Time OOS for 1978:		84 hrs	73.5 hrs
IT-04	1/12/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	2/9/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	3/9/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	4/13/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	5/11/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	6/15/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	7/19/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	8/10/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	9/10/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	10/11/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	11/9/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	12/8/79	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
Total Time OOS for 1979:		84 hrs	73.5
IT-04	1/11/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	2/8/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	3/16/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	3/18/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	3/28/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	5/11/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	5/12/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	5/30/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	6/19/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	6/21/80	1.25 hrs≠ + 4 hrs	1.25 hrs≠ + 4 hrs
IT-04	6/23/80	1.25 hrs≠ + 4 hrs	no test

INSERVICE TEST OUTAGES

Inservice Test No. 04
(SIS is lined up as per CL-7A)

Test No.	Date	Train A OOS*	Train B OOS*
IT-04	7/25/80	1.25 hrs# + 4 hrs	1.25 hrs# + 4 hrs
IT-04	8/22/80	1.25 hrs# + 4 hrs	1.25 hrs# + 4 hrs
IT-04	9/26/80	1.25 hrs# + 4 hrs	1.25 hrs# + 4 hrs
IT-04	10/25/80	1.25 hrs# + 4 hrs	1.25 hrs# + 4 hrs
IT-04	10/29/80	1.25 hrs# + 4 hrs	no test
IT-04	10/30/80	1.25 hrs# + 4 hrs	no test
IT-04	11/23/80	1.25 hrs# + 4 hrs	1.25 hrs# + 4 hrs
IT-04	12/23/80	1.25 hrs# + 4 hrs	1.25 hrs# + 4 hrs
Total Time OOS for 1980:		99.75 hrs	84 hrs

TABLE 11

INSERVICE TEST OUTAGES

Inservice Test No. 05
(SIS is lined up as per CL-7A)

Test No.	Date	Train A OOS*	Train B OOS*
IT-05	1/20/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	2/17/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	3/17/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	4/21/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	5/19/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	6/16/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	6/30/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	7/21/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	8/18/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	9/15/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	10/12/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	10/20/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	11/17/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	12/15/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
Total Time OOS for 1978		63 hrs	63 hrs
IT-05	1/10/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	2/16/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	3/17/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	4/20/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	5/18/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	6/22/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	7/20/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	8/18/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	9/14/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	10/26/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	11/21/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	12/14/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
Total Time OOS for 1979:		54 hrs	54 hrs
IT-05	1/8/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	2/16/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	4/5/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	4/18/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	5/16/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	6/13/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	7/18/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	8/16/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	9/19/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	10/18/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	11/17/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-05	12/28/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
Total Time OOS for 1980:		54 hrs	54 hrs

INSERVICE TEST OUTAGES

Inservice Test No. 06
(SIS is lined up as per CL-7A)

Test No.	Date	Train A OOS*	Train B OOS*
IT-06	1/20/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	2/17/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	3/3/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	3/17/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	4/16/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	5/19/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	6/16/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	7/21/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	8/18/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	9/15/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	10/20/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	11/17/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	12/15/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
Total Time OOS for 1978:		58.5 hrs	58.5 hrs
IT-06	1/9/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	2/16/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	3/17/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	4/11/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	4/20/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	5/19/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	6/22/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	7/20/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	8/17/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	9/14/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	10/19/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	11/16/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	12/14/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
Total Time OOS for 1979:		58.5 hrs	58.5 hrs
IT-06	1/18/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	2/16/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	3/15/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	5/11/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	6/7/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	6/13/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	7/8/80	0.5 hrs≠ + 4 hrs	no test
IT-06	7/18/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	8/16/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	9/19/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	10/18/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	11/80/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-06	12/17/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
Total Time OOS for 1980:		58.5 hrs	54 hrs

INSERVICE TEST OUTAGES

Inservice Test No. 07
(Normal 2-Unit Full Power Service Water Lineup)

Test No.	Date	Rotation & Time OOS	Rotation & Time OOS
IT-07	1/11/78	P32CFD 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	1/25/78	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	2/9/78	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	2/22/78	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	3/8/78	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	3/23/78	P32ACF 1 hr + 4 hr	P32AD& 1 hr + 4 hr
IT-07	4/12/78	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	4/20/78	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	5/10/78	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	5/24/78	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	6/14/78	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	6/28/78	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	7/12/78	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	7/22/78	P32B&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	7/28/78	P32C&F 1 hr + 4 hr	no test
IT-07	8/9/78	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	8/23/78	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	9/13/78	P32CFD 1 hr + 4 hr	P32ADF 1 hr + 4 hr
IT-07	9/27/78	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	10/14/78	P32BCE 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	10/25/78	P32C&F 1 hr + 4 hr	no test
IT-07	11/8/78	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	11/24/78	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	12/6/78	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	12/20/78	P32A&D 1 hr + 4 hr	P32A&E 1 hr + 4 hr

Total time OOS for P32A: 85 hrs

Total time OOS for P32B: 85 hrs

Total time OOS for P32C: 80 hrs

Total time OOS for P32D: 80 hrs

Total time OOS for P32E: 85 hrs

Total time OOS for P32F: 80 hrs

INSERVICE TEST OUTAGES

Inservice Test No. 07
(Normal 2-Unit Full Power Service Water Lineup)

Test No.	Date	Rotation & Time OOS	Rotation & Time OOS
IT-07	1/3/79	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	1/17/79	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	1/31/79	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	2/14/79	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	2/28/79	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	3/14/79	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	3/30/79	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	4/25/79	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	5/9/79	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	5/23/79	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	6/19/79	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	7/5/79	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	7/20/79	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	8/1/79	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	8/15/79	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	9/2/79	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	9/26/79	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	10/10/79	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	10/17/79	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	10/24/79	P32B&E 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	10/31/79	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	11/18/79	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	11/28/79	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	12/13/79	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	12/26/79	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr

Total time OOS for P32A:	85 hrs
Total time OOS for P32B:	80 hrs
Total time OOS for P32C:	85 hrs
Total time OOS for P32D:	80 hrs
Total time OOS for P32E:	95 hrs
Total time OOS for P32F:	80 hrs

INSERVICE TEST OUTAGES

Inservice Test No. 07
(Normal 2-Unit Full Power Service Water Lineup)

Test No.	Date	Rotation & Time OOS	Rotation & Time OOS
IT-07	1/9/80	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	1/23/80	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	2/26/80	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	2/20/80	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	3/5/80	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	3/19/80	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	4/2/80	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	4/3/80	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	4/16/80	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	5/1/80	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	5/14/80	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	5/28/80	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	6/11/80	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	6/25/80	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	7/9/80	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	7/23/80	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	8/6/80	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	8/20/80	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	9/17/80	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	9/30/80	P32B&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	10/1/80	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	10/7/80	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	10/15/80	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	10/29/80	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	11/12/80	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr
IT-07	11/26/80	P32C&F 1 hr + 4 hr	P32A&D 1 hr + 4 hr
IT-07	12/10/80	P32A&D 1 hr + 4 hr	P32B&E 1 hr + 4 hr
IT-07	12/26/80	P32B&E 1 hr + 4 hr	P32C&F 1 hr + 4 hr

Total time OOS for P32A:	100 hrs
Total time OOS for P32B:	100 hrs
Total time OOS for P32C	95 hrs
Total time OOS for P32D	90 hrs
Total time OOS for P32E	95 hrs
Total time OOS for P32F	95 hrs

TABLE 11

INSERVICE TEST OUTAGES

Inservice Test No. 30
(CVCS is lined up as per CL-5A)

Test No.	Date	Train A OOS*	Train B OOS*
IT-30	1/16/78	0.25 hrs* + 4 hrs	0.25 hrs* + 4 hrs
IT-30	4/24/78	0.25 hrs* + 4 hrs	0.25 hrs* + 4 hrs
IT-30	7/17/78	0.25 hrs* + 4 hrs	0.25 hrs* + 4 hrs
IT-30	10/16/78	0.25 hrs* + 4 hrs	0.25 hrs* + 4 hrs
Total Time OOS for 1978:		17 hrs	17 hrs
IT-30	1/15/79	0.25 hrs* + 4 hrs	0.25 hrs* + 4 hrs
IT-30	4/16/79	0.25 hrs* + 4 hrs	0.25 hrs* + 4 hrs
IT-30	7/13/79	0.25 hrs* + 4 hrs	0.25 hrs* + 4 hrs
IT-30	10/12/79	0.25 hrs* + 4 hrs	0.25 hrs* + 4 hrs
Total Time OOS for 1979:		17 hrs	17 hrs
IT-30	1/12/80	0.25 hrs* + 4 hrs	0.25 hrs* + 4 hrs
IT-30	4/1/80	0.25 hrs* + 4 hrs	0.25 hrs* + 4 hrs
IT-30	7/11/80	0.25 hrs* + 4 hrs	0.25 hrs* + 4 hrs
IT-30	10/11/80	0.25 hrs* + 4 hrs	0.25 hrs* + 4 hrs
Total time OOS for 1980:		17 hrs	17 hrs

TABLE 11

INSERVICE TEST OUTAGES

Inservice Test No. 35
(CVCS is lined up as per CL-5A)

Test No.	Date	Train A OOS*	Train B OOS*
IT-35	1/16/78	0.25 hrs≠ + 4 hrs	0.25 hrs≠ + 4 hrs
IT-35	4/21/78	0.25 hrs≠ + 4 hrs	0.25 hrs≠ + 4 hrs
IT-35	7/17/78	0.25 hrs≠ + 4 hrs	0.25 hrs≠ + 4 hrs
IT-35	10/16/78	0.25 hrs≠ + 4 hrs	0.25 hrs≠ + 4 hrs
Total Time OOS for 1978:		17 hrs	17 hrs
IT-35	1/15/79	0.25 hrs≠ + 4 hrs	0.25 hrs≠ + 4 hrs
IT-35	4/16/79	0.25 hrs≠ + 4 hrs	0.25 hrs≠ + 4 hrs
IT-35	7/20/79	0.25 hrs≠ + 4 hrs	0.25 hrs≠ + 4 hrs
IT-35	10/ 2/79	0.25 hrs≠ + 4 hrs	0.25 hrs≠ + 4 hrs
Total Time OOS for 1979:		17 hrs	17 hrs
IT-35	1/12/80	0.25 hrs≠ + 4 hrs	0.25 hrs≠ + 4 hrs
IT-35	4/11/80	0.25 hrs≠ + 4 hrs	0.25 hrs≠ + 4 hrs
IT-35	7/12/80	0.25 hrs≠ + 4 hrs	0.25 hrs≠ + 4 hrs
IT-35	10/11/80	0.25 hrs≠ + 4 hrs	0.25 hrs≠ + 4 hrs
Total Time OOS for 1980:		17 hrs	17 hrs

TABLE 11

INSERVICE TEST OUTAGES

Inservice Test No. 40
(SIS is lined up as per CL-7A)

Test No.	Date	Train A OOS*	Train B OOS*
IT-40	1/9/78	0.5 hrs* + 4 hrs	0.5 hrs* + 4 hrs
IT-40	4/14/78	0.5 hrs* + 4 hrs	0.5 hrs* + 4 hrs
IT-40	7/10/78	0.5 hrs* + 4 hrs	0.5 hrs* + 4 hrs
IT-40	10/16/78	0.5 hrs* + 4 hrs	0.5 hrs* + 4 hrs
Total Time OOS for 1978:		18 hrs	18 hrs
IT-40	1/8/79	0.5 hrs* + 4 hrs	0.5 hrs* + 4 hrs
IT-40	4/9/79	0.5 hrs* + 4 hrs	0.5 hrs* + 4 hrs
IT-40	7/7/79	0.5 hrs* + 4 hrs	0.5 hrs* + 4 hrs
IT-40	10/1/79	0.5 hrs* + 4 hrs	0.5 hrs* + 4 hrs
Total Time OOS for 1979:		18 hrs	18 hrs
IT-40	1/5/80	0.5 hrs* + 4 hrs	0.5 hrs* + 4 hrs
IT-40	4/7/80	0.5 hrs* + 4 hrs	0.5 hrs* + 4 hrs
IT-40	7/5/80	0.5 hrs* + 4 hrs	0.5 hrs* + 4 hrs
IT-40	10/6/80	0.5 hrs* + 4 hrs	0.5 hrs* + 4 hrs
Total Time OOS for 1980:		22.5 hrs	22.5 hrs

TABLE 11

INSERVICE TEST OUTAGES

Inservice Test No. 45
(SIS is lined up as per CL-7A)

Test No.	Date	Train A OOS*	Train B OOS*
IT-45	1/9/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-45	4/16/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-45	7/10/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-45	10/9/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
Total Time OOS for 1978:		18 hrs	18 hrs
IT-45	1/8/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-45	4/14/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-45	7/19/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-45	11/2/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-45	11/20/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
Total Time OOS for 1979:		22.5 hrs	22.5 hrs
IT-45	1/5/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-45	4/7/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-45	7/5/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-45	10/19/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
Total Time OOS for 1980:		18 hrs	18 hrs

TABLE 11

INSERVICE TEST OUTAGES

Inservice Test No. 50

Test No.	Date	Train A OOS*	Train B OOS*
IT-50	1/2/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-50	4/9/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-50	6/16/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-50	3/7/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-50	10/2/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
Total Time OOS for 1978:		22.5 hrs	22.5 hrs
IT-50	2/2/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-50	4/2/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-50	7/2/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-50	10/26/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
Total Time OOS for 1979:		18 hrs	18 hrs
IT-50	1/25/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-50	5/6/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-50	7/25/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-50	10/18/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
Total Time OOS for 1980:		18 hrs	18 hrs

INSERVICE TEST OUTAGES

Inservice Test No. 55
(SIS is lined up as per CL-7A)

Test No.	Date	Train A OOS*	Train B OOS*
IT-55	1/2/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-55	4/9/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-55	6/16/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-55	8/7/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-55	10/2/78	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
Total Time OOS for 1978:		22.5 hrs	22.5 hrs
IT-55	2/2/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-55	4/2/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-55	7/2/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-55	10/26/79	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
Total Time OOS for 1979:		18 hrs	18 hrs
IT-55	1/25/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-55	5/6/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-55	7/25/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
IT-55	10/18/80	0.5 hrs≠ + 4 hrs	0.5 hrs≠ + 4 hrs
Total Time OOS for 1980:		18 hrs	18 hrs

TABLE 12

TECHNICAL SPECIFICATION SURVEILLANCE TEST OUTAGES

Technical Specification Surveillance Tests were performed for each unit to verify the operability of the Emergency Core Cooling System prior to the ASME Section XI Test ("Inservice Tests") done in September of 1977. The test number and system(s) tested are given below:

Test Number	System Tested
TS-1A	High Head Safety Injection, Pumps and Valves - Unit 1
TS-1B	High Head Safety Injection, Pumps and Valves - Unit 2
TS-2	Low Head Safety Injection and Valves Units 1 and 2
TS-3	Spray Pumps, NaOH Additive Valves and Suction and Discharge Valves - Unit 1 and 2

Table 12 gives the test, date performed, test duration, and total time out of service due to testing for each test by unit.

TABLE 12
TECHNICAL SPECIFICATION SURVEILLANCE TEST

Test Number	Date	Test Duration	Total Time Out of Service
TS-1A (Unit 1)	1/2/76	1 hr	22 hrs (Train A)
	2/23/76	1 hr	22 hrs (Train B)
	2/27/76	1 hr	
	3/26/76	1 hr	
	4/23/76	1 hr	
	5/28/76	1 hr	
	6/24/76	1 hr	
	7/22/76	1 hr	
	8/26/76	1 hr	
	9/23/76	1 hr	
	10/27/76	1 hr	
	11/18/76	1 hr	
	11/20/76	1 hr	
	12/23/76	1 hr	
	1/26/77	1 hr	
	2/24/77	1 hr	
	3/24/77	1 hr	
	4/28/77	1 hr	
	5/26/77	1 hr	
	6/23/77	1 hr	
	7/28/77	1 hr	
	8/25/77	1 hr	
TS-2 (Unit 1)	1/2/76	0.5	11 hrs
	2/12/76	0.5	
	3/11/76	0.5	
	4/8/76	0.5	
	5/13/76	0.5	
	6/10/76	0.5	
	7/8/76	0.5	
	8/12/76	0.5	
	9/9/76	0.5	
	10/16/76	0.5	
	11/10/76	0.5	
	11/22/76	0.5	
	12/9/76	0.5	
	1/13/77	0.5	
	2/10/77	0.5	
	3/10/77	0.5	
	4/14/77	0.5	
	5/12/77	0.5	
	6/9/77	0.5	
	7/14/77	0.5	
	8/11/77	0.5	
	9/9/77	0.5	

TABLE 12
TECHNICAL SPECIFICATION SURVEILLANCE TEST

Test Number	Date	Test Duration	Total Time Out of Service
TS-3	1/2/76	4 hrs	80 hrs
(Unit 1)	1/17/76	4 hrs	
	2/20/76	4 hrs	
	3/19/76	4 hrs	
	4/16/76	4 hrs	
	5/21/76	4 hrs	
	6/18/76	4 hrs	
	7/16/76	4 hrs	
	8/20/76	4 hrs	
	9/17/76	4 hrs	
	11/19/76	4 hrs	
	12/17/76	4 hrs	
	1/20/77	4 hrs	
	2/10/77	4 hrs	
	3/10/77	4 hrs	
	4/22/77	4 hrs	
	5/10/77	4 hrs	
	6/17/77	4 hrs	
	7/22/77	4 hrs	
	8/19/77	4 hrs	
TS-1B	1/23/76	1 hr	22 hrs (Train A)
(Unit 2)	2/27/76	1 hr	22 hrs (Train B)
	3/23/76	1 hr	
	4/23/76	1 hr	
	5/28/76	1 hr	
	6/24/76	1 hr	
	7/22/76	1 hr	
	8/26/76	1 hr	
	9/23/76	1 hr	
	10/28/76	1 hr	
	11/25/76	1 hr	
	12/23/76	1 hr	
	1/26/77	1 hr	
	2/24/77	1 hr	
	3/24/77	1 hr	
	4/17/77	1 hr	
	4/28/77	1 hr	
	5/26/77	1 hr	
	6/23/77	1 hr	
	7/28/77	1 hr	
	8/25/77	1 hr	

TABLE 12
TECHNICAL SPECIFICATION SURVEILLANCE TEST

Test Number	Date	Test Duration	Total Time Out of Service
TS-2 (Unit 2)	1/8/76	0.5 hr	11 hrs
	2/12/76	0.5 hr	
	3/11/76	0.5 hr	
	3/24/76	0.5 hr	
	4/8/76	0.5 hr	
	5/13/76	0.5 hr	
	6/10/76	0.5 hr	
	7/8/76	0.5 hr	
	8/12/76	0.5 hr	
	9/9/76	0.5 hr	
	10/15/76	0.5 hr	
	11/11/76	0.5 hr	
	12/9/76	0.5 hr	
	1/13/77	0.5 hr	
	2/10/77	0.5 hr	
	3/10/77	0.5 hr	
	4/14/77	0.5 hr	
	5/12/77	0.5 hr	
	6/9/77	0.5 hr	
	7/14/77	0.5 hr	
	8/11/77	0.5 hr	
	9/9/77	0.5 hr	
TS-3 (Unit 2)	1/17/76	4 hrs	80 hrs
	2/20/76	4 hrs	
	3/19/76	4 hrs	
	4/16/76	4 hrs	
	5/21/76	4 hrs	
	6/18/76	4 hrs	
	7/16/76	4 hrs	
	8/20/76	4 hrs	
	9/17/76	4 hrs	
	10/22/76	4 hrs	
	[illegible]/19/76	4 hrs	
	[illegible]17/76	4 hrs	
	[illegible]21/77	4 hrs	
	2/18/77	4 hrs	
	3/18/77	4 hrs	
	4/17/77	4 hrs	
	5/20/77	4 hrs	
	6/17/77	4 hrs	
	7/22/77	4 hrs	
	8/19/77	4 hrs	

TABLE 13
SERVICE WATER PUMPS PERIODIC CHECK TEST OUTAGES

Prior to "Inservice Tests" the Service Water Pumps were tested by Periodic Check No. 16 (PC-16) Inservice Testing of Service Water Pumps P32A-E. Total testing duration was 40 hrs with only 2 of 8 pumps out of service at any one time.

Pumps Tested		Date	Test Duration	
A&D	B&E	10/26/76	2 hrs	(1 hr/set)
C&F	A&D	11/9/76	2 hrs	(1 hr/set)
A&D	B&E	11/23/76	2 hrs	(1 hr/set)
B&E	C&F	12/14/76	2 hrs	(1 hr/set)
A&D	B&E	1/11/77	2 hrs	(1 hr/set)
A&D	B&E	1/25/77	2 hrs	(1 hr/set)
B&E	C&F	1/25/77	2 hrs	(1 hr/set)
C&F	A&D	2/8/77	2 hrs	(1 hr/set)
A&D	B&E	2/22/77	2 hrs	(1 hr/set)
B&E	C&F	2/22/77	2 hrs	(1 hr/set)
A&D	B&E	4/12/77	2 hrs	(1 hr/set)
B&E	C&F	4/26/77	2 hrs	(1 hr/set)
C&F	A&D	5/10/77	2 hrs	(1 hr/set)
A&D	B&E	5/24/77	2 hrs	(1 hr/set)
B&E	C&F	6/14/77	2 hrs	(1 hr/set)
C&F	A&D	6/28/77	2 hrs	(1 hr/set)
B&D	B&E	7/12/77	2 hrs	(1 hr/set)
B&E	C&F	7/26/77	2 hrs	(1 hr/set)
C&F	A&D	8/10/77	2 hrs	(1 hr/set)
A&D	B&E	8/24/77	2 hrs	(1 hr/set)

Repplaced by IT-07 on 9/19/77

Total Time Out of Service for each Pump

P32-A 13 hrs
P32-B 16 hrs
P32-C 11 hrs
P32-D 14 hrs
P32-E 15 hrs
P32-F 11 hrs