



BOSTON EDISON

Pilgrim Nuclear Power Station
Rocky Hill Road
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NRCB 90-01, Sup.1

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March 5, 1993
BECO 93-032

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

License DPR-35
Docket 50-293

NRC Bulletin 90-01, Supplement 1:
Loss of Fill-Oil in Transmitters Manufactured by Rosemount

Bulletin 90-01, Supplement 1, provides information regarding activities undertaken by the NRC and industry for evaluating Rosemount Transmitter performance and requests licensees to update information provided in response to Bulletin 90-01 action items. The Supplement also requests licensees to provide a response within 60 days of receipt of the Supplement (i.e., March 5, 1993) stating the completion of action items.

Our original response to the Bulletin was submitted by Boston Edison Company (BECO) Letter 90-085, dated July 11, 1990, and supplementary information was provided by BECO Letter 90-139, dated November 14, 1990. This letter updates our previous response to Bulletin 90-01.

In response to the Bulletin action items, we previously identified all Rosemount transmitters, Models 1153, Series B and D, and Models 1154, manufactured prior to July 11, 1989, that are in use in safety-related and ATWS applications. In response to the Supplement, we hold in the warehouse one Rosemount transmitter manufactured prior to July 11, 1989. This transmitter will be sent to Rosemount for repair or refurbishment and will be reserved as a "spare" for future use.

We had previously implemented an Enhanced Surveillance Program to monitor the performance of Rosemount transmitters discussed above. Based on the Bulletin Supplement action items, we have provided the requested information regarding the monitoring program that was implemented as prescribed in the Bulletin. To further enhance this monitoring program, we have chosen to formalize it with additional station procedures. These procedures will consolidate monitoring frequencies and provide redundant channel trending guidance and threshold criteria. We plan to complete these station procedures by May 30, 1993.

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TO: USNRC
FROM: E. T. Boulette

Date: March 5, 1993
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The updated list of Rosemount transmitters that are in use at Pilgrim Nuclear Power Station and details of corrective actions in response to Bulletin Supplement action items 1.a,b,c,d,e,f and 2 are provided in the Enclosure to this letter.

As requested in the Bulletin Supplement for your information and use, we have expended approximately 80 hours to develop this Bulletin Supplement response.

Both Region 1 and NRC NRR staff members previously reviewed our Rosemount transmitter performance monitoring program in the Fall of 1992. We believe the NRC staff members found our program to be effective in that the routine monitoring provided a high degree of assurance for continued safe operation of the plant.


E. T. Boulette

WGL/cab/NRC9001

Enclosure

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ENCLOSURE

BOSTON EDISON COMPANY RESPONSE TO NRC BULLETIN 90-01 SUPPLEMENT 1: LOSS OF FILL-OIL IN TRANSMITTERS MANUFACTURED BY ROSEMOUNT

Supplement 1 requested licensees to modify previously submitted responses to Bulletin 90-01 stating the completion of action items included in the Supplement. This enclosure provides our response to Supplement 1 action items with reference to the previously submitted BECo letters #90-085, dated July 11, 1990, and #90-139 dated November 14, 1990. Bulletin Supplement Action Items are paraphrased in lieu of quoting the entire action items.

SUPPLEMENT ACTION ITEM 1

Review plant records and identify any Rosemount Model 1153, Series B; Model 1153, Series D; and Model 1154 transmitters manufactured before July 11, 1989, that are used or may be used in the future in either safety-related systems or systems installed in accordance with 10CFR50.62 (the ATWS rule).

Response

Boston Edison has attached the updated "Rosemount Transmitter Performance Tracking List" of all 73 Rosemount Model 1153, Series B transmitters used at Pilgrim Station. The performance tracking list specifically includes the 40 transmitters susceptible to the fill-oil leakage problem that are in service at Pilgrim Station in safety-related applications. There are no Model 1153, Series D or Model 1154 Rosemount transmitters in service at Pilgrim Station. Pilgrim Station's ATWS system currently uses Model 1151 transmitters. This list was submitted to the NRC in response to Bulletin 90-01 action items by BECo letter #90-085 dated July 11, 1990. The list has been alphabetically sorted by instrument tag number. Each instrument tag number is accompanied by the service description, model number, serial number, date in service, and relevant information.

Additionally, BECo has identified one (1) Rosemount transmitter in the warehouse that was manufactured prior to July 11, 1989. This transmitter is set aside on "Conditional Release" for applications with compensatory measures. This transmitter will be returned to Rosemount for repair after Refueling Outage (RFO) #9.

Out of the 73 transmitters, 33 transmitters were manufactured after July 11, 1989. Forty Transmitters are within the scope of the Bulletin as shown in the attached Figure, "Rosemount Transmitter Summary and Status Report".

SUPPLEMENT ACTION ITEMS 1.a AND b.

Replace or monitor for the life of the transmitter on a monthly basis, using an enhanced surveillance program, transmitters that have an operating pressure range greater than 1500 psi and that are in use in ESF, RPS, and ATWS applications. Monitor, on a quarterly basis, transmitters in use in the remaining safety-related applications. If the transmitters reached or

exceeded the threshold criteria, the licensee may monitor at less intervals with appropriate justification with a copy to the NRC.

Response

There are no Rosemount transmitters manufactured prior to July 11, 1989, in application with operating pressure greater than 1500 psi in use in safety-related or ATWS applications in the plant. Therefore, no additional actions are required.

SUPPLEMENT ACTION ITEMS 1.c AND d.

(For BWRs) Replace or monitor on a monthly basis using an enhanced surveillance monitoring program until the transmitter reaches the appropriate psi-month threshold criterion recommended by Rosemount any transmitters that have a normal operating pressure greater than 500 psi and less than or equal to 1500 psi that are installed in reactor protection trip systems, ESF actuation systems, or ATWS systems. On a case-by-case basis except for transmitters that initiate reactor protection or ATWS trips for high pressure or low water level, licensees may monitor using an enhanced surveillance program at least once every refueling cycle, but not exceeding 24 months, if sufficient justification is provided based upon transmitter performance in service and its specific safety function. The justification should show that a sufficiently high level of reliability for the function is provided by the redundancy or diversity of applicable instrumentation and control systems, commensurate with the importance of the function, when considered in conjunction with the overall performance of the reactor protection trip system, ESF actuation systems, or ATWS system. Provide to the NRC a copy of the licensee justification to extend the enhanced surveillance program beyond the monthly test interval.

Replace, or monitor at least once every refueling cycle, but not exceeding 24 months, using an enhanced surveillance monitoring program until the transmitter reaches the appropriate psi-month threshold criterion recommended by Rosemount, any transmitters used in safety-related systems that have a normal operating pressure greater than 500 psi and less than or equal to 1500 psi, and that are not installed in reactor protection trip systems, ESF actuation systems, or ATWS systems.

Response

Fourteen Rosemount transmitters are in intermediate pressure applications (greater than 500 psi and less than 1500 psi). These are in Reactor Protection and Engineered Safeguards Features actuation systems. The two transmitters used in the two thirds (2/3) core coverage reactor water level indications have exceeded their 60,000 month threshold criteria. These are being monitored through our Enhanced Surveillance Program (ESP). The requirements for continued monitoring beyond this threshold are no longer necessary. The trending that supported the requirements of these two transmitters will continue through the completion of the next scheduled calibration. The remaining 12 have not reached their threshold criteria, and will continue to be monitored on a monthly basis through our ESP until they reach the threshold criteria and the justifications for high reliability is maintained and satisfied.

A review of the Rosemount suspect list (Addenda 1 through 4 of the Rosemount Technical Bulletins) has identified transmitters installed in Pilgrim safety-related systems. With the exception of three transmitters in the Reactor Protection System low vacuum applications, all other suspect list transmitters have been replaced. These three transmitters remaining in service in the condenser low vacuum applications have a basis for continued operation as discussed in BECo letter 90-139, dated November 14, 1990.

SUPPLEMENT ACTION ITEM 1.e

At licensee discretion, exclude from the enhanced surveillance program any transmitters that have a normal operating pressure greater than 500 psi and less than or equal to 1500 psi that have reached the appropriate psi-month threshold criterion recommended by Rosemount (60,000 psi-months or 130,000 psi-months depending on the range code of the transmitter). A high degree of confidence should be maintained for detecting failure of these transmitters caused by a loss of fill-oil and a high degree of reliability should be maintained for the function consistent with its safety significance.

Response

Upon reaching the threshold criteria for each Rosemount transmitter in the intermediate operating pressure range, BECo intends to exclude such transmitters from the routine monitoring program based on the demonstrated high degree of confidence and reliability consistent with their safety significance. As recommended in the Bulletin Supplement, we continue to review transmitter performance during refueling outages.

SUPPLEMENT ACTION ITEM 1.f

At licensee discretion, exclude from the enhanced surveillance program any transmitters that have a normal operating pressure less than or equal to 500 psi. A high degree of confidence should be maintained for detecting failure of these transmitters caused by a loss of fill-oil and a high degree of reliability should be maintained for the function consistent with its safety significance.

Response

Twenty-six Rosemount transmitters are in the low pressure applications (less than 500 psi). These are not required to be monitored through the ESP as prescribed in the Bulletin Supplement; however, to ensure continued confidence and reliability of transmitter performance as recommended in the Bulletin Supplement, we have elected to continue to monitor them through the ESP on a frequent basis, as dictated by the performance of each transmitter, until they reach the threshold criteria.

In addition, 33 Rosemount transmitters that fall outside the scope of the Bulletin are also being monitored using the ESP to gather data for assuring high degree of confidence and reliability of performance. As we collect the performance data and based on demonstrated confidence and reliability, we intend to reduce surveillance activities and omit these transmitters from the scope of the ESP.

SUPPLEMENT ACTION ITEM 2

Evaluate the enhanced surveillance monitoring program to ensure the program provides measurement data with an accuracy range consistent with that needed for comparison with manufacturer drift data criteria for determining degradation caused by a loss of fill-oil.

Response

The routine monitoring of transmitter performance and measured drift data are compared against the Rosemount upper and lower drift limits for tracking and determining degradation in the performance of transmitters. The Rosemount drift limits are included in the transmitter performance tracking list.

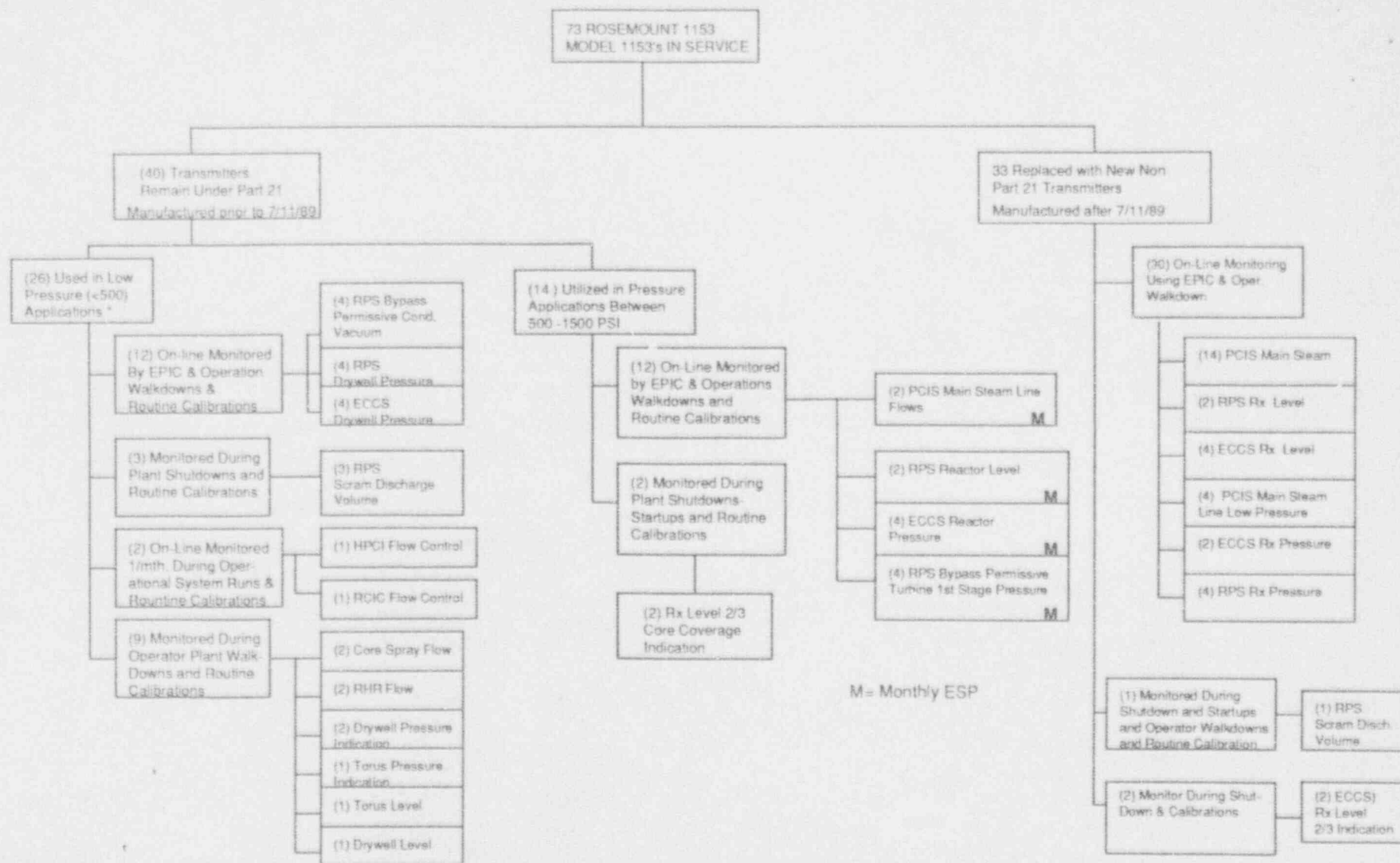
CONCLUSION

Our current enhanced surveillance program includes transmitters beyond the scope of the Bulletin Supplement. We have taken this approach to assure continued confidence in the performance of transmitters and a high degree of reliability to ensure their performance consistent with their safety significance. We plan to delete these transmitters from the scope of ESP based upon demonstrated performance.

Figure : Rosemount Transmitter Summary and Status Report
Attachment: Rosemount Transmitter Performance Tracking List

NRC9001

PILGRIM STATION ROSEMOUNT TRANSMITTER SUMMARY AND STATUS REPORT



* (e.g., All applications following
are normally operating below 150 psi)

ROSEMOUNT TRANSMITTER PERFORMANCE TRACKING LIST

This data base consist of all Rosemount Transmitters currently used at Pilgrim Station which are susceptible to the oil leakage issue addressed in NRC Info Notice 90-42 and NRC Bulletin 90-01. This list is intended to summarize many areas of importance which relate to oil leakage issue and provide a brief and accurate history of each application. Updating this database will occur frequently. User's should be aware of the last update which is published on the top of each page. Provided below is a detailed explanation for each category.

Instrument Number:	Plant assigned identification number defined by specific application.
Description:	Name for the process that is being measured.
Model Number:	Method of identification assigned by manufacture which denotes specific characteristics of transmitter (i.e. type, range, options, etc.)
Serial Number:	Unique number assigned to each transmitter by manufacture for later identification or tracking. In the applications more than one serial number appears for any one instrument, the first serial number (top) given will be the original transmitter installed. Each succeeding serial number represents the next transmitter that was/is being used in that application. (i.e. bottom serial number represents the currently used transmitter).
Notes next to Serial Number	(1) = These transmitters are from manufacturing lots that have been identified by Rosemount as having a high failure traction due to loss of fill-oil. (2) = This transmitter is from high failure traction lot, but has been repaired.
Date in Service:	Date indicates when transmitter was installed and the date it was removed. These two dates only apply to the transmitter serial number shown immediately to the left. Areas where dotted lines (.....) appear represent currently used transmitter.
Potential Part 21 Problem:	Used as a quick reference to identify which transmitter is/was susceptible to oil leakage issue. (Notice LT-263-73B serial number 412707 was fabricated before April 21, 1989 which included it as a Part 21 concern. Recent repairs made to S/N 412707 corrected this deficiency.

"Y" = Transmitters manufactured prior to July 11, 1989. These transmitters have been identified by Rosemount via Part 21 letter as being susceptible to the fill-oil leakage problem.

"N" = Transmitters manufactured after July 11, 1989. Rosemount has indicated that these transmitters are not susceptible to fill-oil leakage problem.

PSI-Months and
Operating Days:

Values represent approximate accumulated time at pressure. The first value given represents months at pressure (example, 1000 PSI for 30.4 days = 1000 PSI months). The second value provided represents total accumulated days at pressure. Caution: these days are updated frequently and are subject to change as updates are performed.

Reason for Replacement:

Provides for a very brief description for replacing this transmitter. (i.e. impurities: Identifies cases where failure symptoms appeared to be related to the impurities in the oil, leaking oil; Identifies cases where failure symptoms appeared to be related to oil leakage issue, PDC --- ---; Identifies design changes).

Calibration Range
Down Factor:

Values provided indicate calibration range for an output from 4 milliamps to 20 milliamps. Range down factor = upper range limit of transmitter divided by calibration pressure span.

Lower Drift Limit:

Limits used to identify the maximum allowable drift transmitter.

Upper Drift Limit:

Can experience over its operating life before response time degradation occurs.

Reference Document:

Documents used to identify failures or Maintenance Requests requiring replacement.

PNPS ROSEMOUNT TRANSMITTER Performance Tracking

INSTRUMENT NUMBER	DESCRIPTION	MODEL #	SERIAL #	POTENTIAL PART 21 PROBLEM		DATE IN SERVICE	PSI - MONTHS (OPERATING DAYS)	REASON FOR REPLACEMENT	CALIBRATION RANGE	LOWER & UPPER DRIFT LIMITS	NORMAL SERVICE PRESSURE (PSIG)	COMPUTER POINT NUMBER
				Y/N								
DPT261-2A	Main Steam Line Flow (PCIS Input)	1153DB7RCN0012	412863	Y		9/87-6/6/89	1,583 (50)	Impurities	0-148.125 psid	LDL 2.4 psi	950	ATS022
			418324	Y		6/6/89-3/1/90	7,738 (238)	Leaking Oil		UDL 3.29 psi		
			410571	Y		3/1/90-5/19/91	11,352 (336)	up-grade	RDF = 2.025			
			501026	N		5/19-91.....	19,208 (615)					
DPT261-2B	Main Steam Line Flow (PCIS Input)	1153DB7RCN0012	412864	Y		9/87-7/25/90	12,303 (376)	Up-Grade	0-148.125 psid	LDL 2.4 psi	950	ATS026
			412868A	N		7/26/90.....	23,174 (742)		RDF = 2.025	UDL 3.29 psi		
DPT261-2C	Main Steam Line Flow (PCIS Input)	1153DB7RCN0012	412865	Y		9/87-8/1/90	12,474 (381)	Up-Grade	0-148.125 psid	LDL 2.4 psi	950	ATS024
			0500947	N		8/1/90.....	23,019 (737)		RDF = 2.025	UDL 3.29 psi		
DPT261-2D	Main Steam Line Flow (PCIS Input)	1153DB7RCN0012	412866	Y		9/87-3/2/90	9,312 (288)	Leaking Oil	0-148.125 psid	LDL 2.4 psi	950	ATS028
			0500645	N		3/2/90.....	25,735 (824)	RDF = 2.025	UDL 3.29 psi			
DPT261-2E	Main Steam Line Flow (PCIS Input)	1153DB7RCN0012	412867	Y		9/87-12/21/90	13,260 (404)	Up-Grade	0-148.125 psid	LDL 2.4 psi	950	ATS030
			412900A	N		12/21/90.....	19,271 (617)		RDF = 2.025	UDL 3.29 psi		
DPT261-2F	Main Steam Line Flow (PCIS Input)	1153DB7RCN0012	412868	Y		9/87-8/89	3,712 (116)	Impurities	0-148.125 psid	LDL 2.4 psi	950	ATS034
			412949	Y		8/89-7/90	8,232 (251)	Up-Grade	RDF = 2.025	UDL 3.29 psi		
			0500784	N		7/17/90.....	23,456 (751)					
DPT261-2G	Main Steam Line Flow (PCIS Input)	1153DB7RCN0012	412869	Y		9/87-7/17/90	11,995 (367)	Up-Grade	0-148.125 psid	LDL 2.4 psi	950	ATS032
			0500782	N		7/17/90.....	23,456 (751)		RDF = 2.025	UDL 3.29 psi		
DPT261-2H	Main Steam Line Flow (PCIS Input)	1153DB7RCN0012	412899	Y		9/87.....	13,260 (404)	Impurities	0-148.125 psid	LDL 2.4 psi	950	ATS036
			412902A	N			15,241 (488)		RDF = 2.025	UDL 3.29 psi		
DPT261-2J	Main Steam Line Flow (PCIS Input)	1153DB7RCN0012	412900	Y		9/87-1/19/90	6,752 (211)	Leaking Oil	0-148.125 psid	LDL 2.4 psi	950	ATS038
			418337	Y		1/19/90.....	27,454 (879)		RDF = 2.025	UDL 3.29 psi		
DPT261-2K	Main Steam Line Flow (PCIS Input)	1153DB7RCN0012	412901	Y		9/87-3/13/90	9,312 (288)	Leaking Oil	0-148.125 psid	LDL 2.4 psi	950	ATS042
			0500783	N		3/13/90.....	22,613 (724)		RDF = 2.025	UDL 3.29 psi		
DPT261-2L	Main Steam Line Flow (PCIS Input)	1153DB7RCN0012	412902	Y		9/87-10/11/89	5,120 (160)	Impurities	0-148.125 psid	LDL 2.4 psi	950	ATS040
			0500030	N		10/11/89.....	29,265 (937)		RDF = 2.025	UDL 3.29 psi		

February 24, 1993

INSTRUMENT NUMBER	DESCRIPTION	MODEL #	POTENTIAL PART 21 PROBLEM SERIAL #	DATE IN SERVICE	Y	N	MONTHS OPERATING DATA	REASON FOR REPLACEMENT	CALIBRATION RANGE	LOWER & UPPER DRIFT LIMITS	NORMAL SERVICE PRESS. (PSIG)	COMPUTER PRINT NUMBER
DPT261-2M	Main Steam Line Flow (PCIS Input)	1153DB7RCN0012	412948 0500949	Y 9/87-12/7/90 N 12/7/90			13,260 (404) 19,527 (538)	Up-Grade	3-148 125 psid RDF = 2.025	LDL 2.4 psi UDL 3.29 psi	950	ATS044
DPT261-2N	Main Steam Line Flow (PCIS Input)	1153DB7RCN0012	412949 418396	Y 9/87-3/10/89 Y 3/10/89			195 (6) 34,575 (1107)	Impurities	0-148 125 psid RDF = 2.025	LDL 2.4 psi UDL 3.29 psi	950	ATS046
DPT261-2P	Main Steam Line Flow (PCIS Input)	1153DB7RCN0012	412950 501027	Y 9/87-12/21/90 N 12/21/90			13,260 (404) 19,271 (517)	Up-Grade	0-148 125 psid RDF = 2.025	LDL 2.4 psi UDL 3.29 psi	950	ATS050
DPT261-2R	Main Steam Line Flow (PCIS Input)	1153DB7RCN0012	412951 0500948	Y 9/87-8/10/90 N 8/10/90			12,816 (391) 23,019 (737)	Up-Grade	0-148 125 psid RDF = 2.025	LDL 2.4 psi UDL 3.29 psi	950	ATS048
DPT261-2S	Main Steam Line Flow (PCIS Input)	1153DB7RCN0012	412952 0500670	Y 9/87-3/6/90 N 3/6/90			9,312 (288) 25,736 (824)	Leaking Oil	0-148 125 psid RDF = 2.025	LDL 2.4 psi UDL 3.29 psi	950	ATS052
FT1049A	RHR Disch Header (Indication)	1153DB86PC	407376	Y 5/22/84			0-797.4" H2O		RDF = 3.48	LDL 77.6" H2O UDL 94.25" H2O	256	RHR002
FT1049B	RHR Disch (Indication)	1153DB86PC	406405	Y 5/21/84			0-797.4" H2O		RDF = 3.48	LDL 77.6" H2O UDL 94.25" H2O	256	RHR004
FT1300-4	RCIG Pump Disch (Flow Control)	1153DB86PC	407379	Y 2/1/84			(3086)		0-346.8" H2O RDF = 2.16	LDL 6.00" H2O UDL 10.89" H2O	0-Normal 1220-Oper	RCI010
FT1461A	Core Spray Pump Disch (Indication)	1153DB86PC	407377	Y 2/1/84			(3086)		0-299.3" H2O RDF = 2.506	LDL 5.98" H2O UDL 10.86" H2O	300	CSP002
FT1461B	Core Spray Pump Disch (Indication)	1153DB86PC	407378	Y 2/1/84			(3086)		0-299.3" H2O RDF = 2.506	LDL 5.98" H2O UDL 10.86" H2O	300	CSP004
FT2358	HPCI Pump Disch (Flow Control)	1153DB86PC	407380	Y 5/1/84			(2966)		0-297.3" H2O RDF = 2.52	LDL 6.01" H2O UDL 10.88" H2O	0-Normal 1220-Oper	HPC010
LT302-82A	Scram Disch Vol Level (RPS Input)	1153DB84PG	409039	Y 10/15/84			(2829)		9.5 - 85.5" H2O RDF = 1.97	LDL 75" H2O UDL 2.25" H2O	0-Normal 1130-Oper	

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INSTRUMENT NUMBER	DESCRIPTION	MODEL #	POTENTIAL PART 21 PROBLEM		DATE IN SERVICE	F ₂₁ - MONTHS (OPERATING DAYS)	REASON FOR REPLACEMENT	CALIBRATION RANGE	LOWER & UPPER DRIFT LIMITS	NORMAL SERVICE PRESSURE (PSIG)	COMPUTER POINT NUMBER
			SERIAL #	Y/N							
LT302-82B	Scram Disch Vol Level (RPS Input)	1153DB4PG	409036	Y	10/11/84.....	(2833)		9.5 - 85.5" H ₂ O RDF = 1.97	LDL .75" H ₂ O UDL 2.25" H ₂ O	0-Normal 1130-Oper.	
LT302-83C	Scram Disch Vol Level (RPS Input)	1153DB4PG	409037 412279A	Y N	10/11/84-6/15/91 6/15/91.....	(2544) (336)		9.5 - 85.5" H ₂ O RDF = 1.97	LDL .75" H ₂ O UDL 2.25" H ₂ O	0-Normal 1130-Oper.	
LT302-83D	Scram Disch Vol Level (RPS Input)	1153DB4PG	409038	Y	10/11/84.....	(2833)		9.5 - 85.5" H ₂ O RDF = 1.97	LDL .75" H ₂ O UDL 2.25" H ₂ O	0-Normal 1130-Oper.	
LT 500B	Contr. Wtr Level (Indication)	1153DB4RCN0012	418147	Y	5/2/89.....	38 (1165)		372.2-20.3" H ₂ O RDF = 2.13	LDL 11.12 inch UDL 6.12 inch	1	DRY132
LT1001-650A	Rx Wtr Lvl 2/3 Core Coverage (Indication)	1153DB5	370848	Y	3/82.....	76,177 (2317)		348.28-50.14" H ₂ O RDF = 2.60	LDL 11.4 inch UDL 6.3 inch	1000	RXX074
LT1001-650B	Rx Wtr Lvl 2/3 Core Coverage (Indication)	1153DB5	370849	Y	3/82.....	76,177 (2317)	347.27-59.12" H ₂ O RDF = 2.62		LDL 11.4 inch UDL 6.3 inch	1000	RXX076
LT263-57A	Rx Level (RPS Input)	1153DB4RCN0012	412605 412901A	Y N	7/87-6/15/91 6/15/91.....	11052 (336) RDF = 2.14	Up-Grade	113.01-42.95" H ₂ O	LDL 2.95 inch UDL 1.23 inch	1000	ATS002
LT263-57B	Rx Level (RPS Input)	1153DB4RCN0012	412606 412361	Y Y	7/87-3/7/90 3/7/90.....	9,262 (286) 27,091 (824)	Impurities	113.01-42.95" H ₂ O RDF = 2.14	LDL 2.95 inch UDL 1.23 inch	1000	ATS006
LT263-58A	Rx Level (RPS Input)	1153DB4RCN0012	412361 418907 418710	Y Y Y	5/88-9/2/89 9/89-10/30/89 10/30/89.....	3,261 (103) 1,202 (37) 31,430 (956)	Impurities Impurities	113.09-43.04" H ₂ O RDF = 2.14	LDL 2.95 inch UDL 1.23 inch	1000	ATS004
LT263-58B	Rx Level (RPS Input)	1153DB4RCN0012	412608 418709A	Y N	7/87-8/18/90 8/18/90-10/21/90	13,089 (399) 27,715 (843)	Impurities	113.09-43.04" H ₂ O RDF = 2.14	LDL 2.95 inch UDL 1.23 inch	1000	ATS008
LT263-72A	Rx Level (ECCS Input)	1153CB4RCN0012 1153DB4RC	412601 410557 412952A	Y Y N	7/87-3/13/90 3/13/90-6/8/91 6/8/91.....	9,312 (288) 12,906 (383) 16,044 (488)	Leaking Up-Grade	113.01-42.95" H ₂ O RDF = 2.14	LDL 2.95 inch UDL 1.23 inch	1000	ATS010

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INSTRUMENT NUMBER	DESCRIPTION	MODEL #	SERIAL #	POTENTIAL PART 21 PROBLEM	DATE IN SERVICE	PS. (MONTHS (OPERATING DAYS)	REASON FOR REPLACEMENT	CALIBRATION RANGE	LOWER & UPPER DRIFT LIMITS	NORMAL SERVICE PRESSURE (PSIG)	COMPUTER POINT NUMBER
				Y/N							
LT263-72B	Rx Level (ECCS Input)	1153DB4RCN0012	412602	Y	7/87-7/5/91	13,260 (404)	Up-Grade	113.09-43.04" H2O	LDL 2.95 inch	1000	ATS016
			412950A	N	7/5/91.....	16,044 (488)		RDF = 2.14	UDL 1.23 inch		
LT263-72C	Rx Level (ECCS Input)	1153DB4RCN0012	412603	Y	7/87-6/11/91	13,260 (404)	Up-Grade	113.01-42.95" H2O	LDL 2.95 inch	1000	ATS012
			418324	N	6/11/91.....	16,044 (488)		RDF = 2.14	UDL 1.23 inch		
LT263-72D	Rx Level (ECCS Input)	1153DB4RCN0012	412604	Y	7/87-6/6/91	13,260 (404)	Up-Grade	113.09-43.04" H2O	LDL 2.95 inch	1000	ATS018
			412601A	N	6/6/91.....	16,044 (488)		RDF = 2.14	UDL 1.23 inch		
LT263-73A ATS014	Rx Level (ECCS Input)	1153DB5RCN0012	412599	Y	6/87-3/20/90	9,292 (288)	JCO Required	348.28-60.14" H2O	LDL 11.4 inch	1000	
			0500607	N	3/20/90.....	27,091 (824)		RDF = 2.6	UDL 6.3 inch		
LT263-73B ATS020	Rx Level (ECCS Input)	1153DB5RCN0012	412600	Y	6/87-3/24/90	9,292 (288)	JCO Required	347.27-59.12" H2O	LDL 11.4 inch	1000	
			412707A	N	3/24/90.....	27,091 (824)		RDF = 2.6	UDL 6.3 inch		
LT5068	Torus Water Level (Indication)	1153DB4PG	415268	Y	9/87.....	51.5-83.5" H2O	LDL .74 inch	RDF = 4.6875	UDL 2.25 inch	4	
PT1001-63	Torus Bottom Press. (indication)	1153GB6RCN0012	418150	Y	5/89.....	0-100 psi		RDF = 1.0	LDL 2.8 inch UDL 3.4 inch	4	SCH044
PT1001-601A	Drywell Pressure (Indication)	1152AP5E22T028	224025	Y	3/82-3/28/86	(1,490)	PDC84-17	(-)5 - (+)5 inch	LDL .216 psi	1	DRY052
		1153GB5RCN0012	413606	Y	3/28/86.....	(2,165)			UDL .392 psi		
PT1001-601B	Drywell Pressure (Indication)	1152AP5E22T028	224026	Y	2/82-3/28/86	(1,490)	PDC84-17	(-)5 - (+)5 inch	LDL .216 psi	1	DRY054
		1153GB5RCN0012	413605	Y	3/28/86.....	(2,165)			UDL .392 psi		
PT1001-89A	Drywell Pressure (ECCS Input)	1153GB4RCN0012	412764	Y	5/87.....	(1,567)		0-5 psig RDF = 1.079	LDL .0234 psi UDL .0834 psi	1	ATS078
PT1001-89B	Drywell Pressure	1153GB4RCN0012	412765	Y	5/87.....	(1,567)		0-5 psig RDF = 1.079	LDL .0234 psi UDL .0834 psi	1	INPUT

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INSTRUMENT NUMBER	DESCRIPTION	MODEL #	SERIAL #	POTENTIAL PART 21 PROBLEM	DATE IN SERVICE	PSI - MONTHS (OPERATING DAYS)	REASON FOR REPLACEMENT	CALIBRATION RANGE	LOWER & UPPER DRIFT LIMITS	NORMAL SERVICE PRESSURE (PSIG)	COMPUTER POINT NUMBER
				Y/N							
PT1001-89C	Drywell Pressure (ECCS Input)	1153GB4RCN0012	412766	Y	5/87.....	(1,567)		0-5 psig RDF = 1.079	LDL .0234 psi UDL .0834 psi	1	ATS080
PT1001-39D	Drywell Pressure (ECCS Input)	1153GB4RCN0012	412767	Y	5/87.....	(1,567)		0-5 psig RDF = 1.079	LDL .0234 psi UDL .0834 psi	1	ATS084
PT261-30A	Main Steam Line Pressure (PCIS Input)	1153GB9RCN0012	412859 412943A	Y N	4/87-5/16/91 5/16/91.....	13,260 (226) 15,241 (488)	Upgrade	0-1200 psig RDF = 2.5	LDL 3.525 psi	950	ATS106
PT261-30B	Main Steam Line Pressure (PCIS Input)	1153GB9RCN0012	412860 422278 0500654	Y Y N	4/87-9/2/89 9/89-8/3/90 8/3/90.....	4,605 (151) 7,971 (233) 21,925 (702)	Impurities Impurities	0-1200 psig RDF = 2.5	LDL 3.525 psi	950	ATS110
PT261-30C	Main Steam Line Pressure (PCIS Input)	1153GB9RCN0012	412889 503724	Y N	2/87-6/5/91 6/5/91.....	15,241 (488)	Upgrade	0-1200 psig RDF = 2.5	LDL 3.525 psi	950	ATS108
PT261-30D	Main Steam Line Pressure (PCIS Input)	1153GB9RCN0012	412890 503490	Y N	2/87-5/17/90 5/17/90.....	(624) 22,550 (722)	Upgrade	0-1200 psig RDF = 2.5	LDL 3.525 psi	950	ATS112
PT263-49A	Rx Pressure (ECCS Input)	1153GB9RCN0012	412891 503703	Y N	7/87-11/18/91 11/18/91.....	22,798 (670) 13,545 (412)	Oil Leakage	13-1513 psig RDF = 2.0	LDL 3.46 psi	1000	ATS094
PT263-49B	Rx Pressure (ECCS Input)	1153GB9RCN0012	412892	Y	7/87.....	35,573 (1082)		13-1513 psig RDF = 2.0	LDL 3.46 psi	1000	ATS100
PT263-50A	Rx Pressure (ECCS Input)	1153GB9RCN0012	412893	Y	5/87.....	22,798 (670) 35,573 (1082)		13-1213 psig RDF = 2.5	LDL 3.46 psi	1000	ATS096
PT263-50B	Rx Pressure (ECCS Input)	1153GB9RCN0012	412894 412943A	Y N	5/87-3/6/91 3/6/91.....	22,798 (670) 17,457 (531)	Oil Leakage	13-1213 psig RDF = 2.5	LDL 3.46 psi	1000	ATS102

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				Y/N							
PT263-51A ATS086	Rx Pressure (RPS Input)	1153GB9RCN0012	412895	Y	8/87-3/15/90	9,312 (288)	JCO Required		13-1213 psig	LDL 3.46 psi	1000
			0500471	N	3/15/90.....	27,091 (824)	RDF=2.5				
PT263-51B ATS090	Rx Pressure (RPS Input)	1153GB9RCN0012	412943	Y	5/87-3/15/90	9,312 (288)	JCO Required		13-1213 psig	LDL 3.46 psi	1000
			0500482	N	3/15/90.....	27,091 (824)	RDF=2.5				
PT263-51C ATS088	Rx Pressure (RPS Input)	1153GB9RCN0012	412944	Y	6/87-3/14/90	9,312 (288)	JCO Required		13-1213 psig	LDL 3.46 psi	1000
			0500656	N	3/14/90.....	27,123 (825)	RDF=2.5				
PT263-51D ATS092	Rx Pressure (RPS Input)	1153GB9RCN0012	413331	Y	6/87-3/21/90	9,312 (288)	JCO Required		13-1213 psig	LDL 3.46 psi	1000
			0500655	N	3/21/90.....	27,091 (824)	RDF=2.5				
PT263-52A	Rx Pressure (ECCS Input)	1153GB9RCN0012	412946	Y	2/87.....	33,567 (1021)		13-1213 psig	LDL 3.46 psi	1000	ATS098
							RDF=2.5				
PT263-52B	Rx Pressure (ECCS Input)	1153GB9RCN0012	412947	Y	2/87.....	33,567 (1021)		13-1213 psig	LDL 3.46 psi	1000	ATS104
							RDF=2.5				
PT503A	Main Cond. (RPS Input)	1153DB5RCN0012	412595	Y	8/86.....	328 (1021)		30" HG VAC-0 psig	LDL .38	28" HG VAC	ATS054
							RDF=1.837		UDL 1.08 inch HG VAC		
PT503B	Main Cond. (RPS Input)	1153DB5RCN0012	412596	Y	8/86.....	328 (1021)		30" HG VAC-0 psig	LDL .38	28" HG VAC	ATS058
							RDF=1.837		UDL 1.08 inch HG VAC		
PT503C VAC	Main Cond. ATS056 (RPS Input)	1153DB5RCN0012	412597	Y	8/86-1/10/87	0 (0)	Thread Dam.		30" HG VAC-0 psig	LDL .38	28" HG
			412707	Y	1/87-8/1/88	0 (0)	Impurities	RDF=1.837	UDL 1.08 inch HG VAC		
			412597	Y	8/86.....	328 (1021)					
PT503D	Main Cond. (RPS Input)	1153DB5RCN0012	412598	Y	8/86.....	328 (1021)		30" HG VAC-0 psig	LDL .38	28" HG VAC	ATS060
							RDF=1.837		UDL 1.08 inch HG VAC		

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				Y/N							
PT504A	Turb 1st Stage Pressure (RPS Input)	1153GB9RCN0012	412768	Y	2/87.....	23,497 (1021)		0-1200 psig RDF = 2.5	LDL 3.75 psi	700	ATS062
PT504B	Turb 1st Stage Pressure (RPS Input)	1153GB9RCN0012	412856	Y	2/87.....	23,497 (1021)		0-1200 psig RDF = 2.5	LDL 3.75 psi	700	ATS066
PT504C	Turb 1st Stage Pressure (RPS Input)	1153GB9RCN0012	412857	Y	2/87.....	23,497 (1021)		0-1200 psig RDF = 2.5	LDL 3.75 psi	700	ATS064
PT504D	Turb 1st Stage Pressure (RPS Input)	1153GB9RCN0012	412858	Y	2/87.....	23,497 (1021)		0-1200 psig RDF = 2.5	LDL 3.75 psi	700	ATS068
PT512A	Drywell Pressure (RPS Input)	1153GB4RCN0012	412760	Y	5/87.....	(2050)		0-5 psig RDF = 1.07	LDL .0234 psi UDL .0834 psi	1	ATS070
PT512B	Drywell Pressure (RPS Input)	1153GB4RCN0012	412761	Y	5/87.....	(2050)		0-5 psig RDF = 1.07	LDL .0234 psi UDL .0834 psi	1	ATS074
PT512C	Drywell Pressure (RPS Input)	1153GB4RCN0012	412762	Y	5/87.....	(2050)		0-5 psig RDF = 1.07	LDL .0234 psi UDL .0834 psi	1	ATS072
PT512D	Drywell Pressure (RPS Input)	1153GB4RCN0012	412763	Y	5/87.....	(2050)		0-5 psig RDF = 1.07	LDL .0234 psi UDL .0834 psi	1	ATS076

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