ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9007240044 DOC.DATE: 90/07/20 NOTARIZED: YES DOCKET #
FACIL:50-220 Nine Mile Point Nuclear Station, Unit 1, Niagara Powe 05000220
50-410 Nine Mile Point Nuclear Station, Unit 2, Niagara Moha 05000410
AUTH.NAME AUTHOR AFFILIATION
TERRY,C.D. Niagara Mohawk Power Corp.
RECIP.NAME RECIPIENT AFFILIATION
Document Control Branch (Document Control Desk)

SUBJECT: Responds to NRC Bulletin 90-001, "Loss of Fill-Oil in Transmitters Mfg by Rosemount."

DISTRIBUTION CODE: IE39D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 14
TITLE: NRC Bulletin 90-001, Loss of Fill Oil in Transmitters Mfg by Rosemoun

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD1-1 LA	1	0	PD1-1 PD	1	1
	MARTIN,R.	1	1			
INTERNAL:	NRR LE,N	1	1	NRR PERCH,R	1	1
	NRR RAMSEY,J	2	2	NRR/DRIS/RVIB	1	1
	REG FILE 02	1	1	RES FARMER,W	1	1
	RGN1 FILE 01	1	1			
EXTERNAL:	LPDR	1	1	NRC PDR	1	1
	NSIC	1	1			

R I D S / A D D S

R I D S / A D D S

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK, ROOM P1-37 (EXT. 20079) TO ELIMINATE YOUR NAME FROM DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTTR 14 ENCL 13

AO/Cubb

NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION/301 PLAINFIELD ROAD, SYRACUSE, N.Y. 13212/TELEPHONE (315) 474-1511

July 20, 1990
NMP1L 0518

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Re: Nine Mile Point Unit 1
Docket No. 50-220
DPR-63

Re: Nine Mile Point Unit 2
Docket No. 50-410
NPF-69

Gentlemen:

The purpose of this letter is to provide Niagara Mohawk's response to NRC Bulletin No. 90-01, "Loss of Fill-Oil in Transmitters Manufactured by Rosemount". NRC Bulletin No. 90-01 discusses the failure of several Rosemount Model 1153 Series B, 1153 Series D and Model 1154 transmitters due to a gradual loss of fill-oil from the transmitter's sealed sensing module and delineates the required Licensee actions and reporting requirements concerning the fill-oil loss problem. Enclosed Attachments A and B provide our response to the Bulletin for Nine Mile Point Unit 1 and Nine Mile Point Unit 2, respectively.

Very truly yours,

NIAGARA MOHAWK POWER CORPORATION

C. D. Terry
Vice President
Nuclear Engineering and Licensing

JMT/mjd
8670G

Attachment

xc: Regional Administrator, Region I
Mr. R. A. Capra, Director
Mr. R. E. Martin, Project Manager
Mr. W. A. Cook, Resident Inspector
Records Management

IE39
1/1

Attachment A

Nine Mile Point Unit 1

Reporting Requirements for Operating Reactors

Reporting Requirement 1a

Confirm that Items 1, 2, 3, 4, and 5 of Requested Actions for Operating Reactors (as delineated in NRC Bulletin 90-01) have been completed.

NRC Bulletin No. 90-01, Requested Actions 1, 2, 3, 4, and 5, in general, ask the Licensee to complete the following:

1. Identify Model 1153 Series B, 1153 Series D, and Model 1154 pressure or differential pressure transmitters, excluding Model 1153 Series B, 1153 Series D, and Model 1154 transmitters manufactured by Rosemount subsequent to July 11, 1989, that are currently utilized in either safety-related systems or systems installed in accordance with 10CFR50.62 (the ATWS rule).

2. Determine whether any transmitters identified in Item 1 are from the manufacturing lots that have been identified by Rosemount as having a high failure fraction due to loss of fill-oil. Replace at the earliest appropriate opportunity, transmitters from these suspect lots in use in the reactor protection or engineered safety features actuation systems.

3. Review plant records associated with the transmitters identified in Item 1 above to determine whether any of these transmitters may have already exhibited symptoms indicative of loss of fill-oil. Appropriate operability acceptance criteria should be developed and applied to transmitters identified as having exhibited symptoms indicative of loss of fill-oil from this plant record review. Transmitters identified as having exhibited symptoms indicative of loss of fill-oil that do not conform to the operability acceptance criteria and are not addressed in the technical specifications should be replaced at the earliest appropriate opportunity.

4. Develop and implement an enhanced surveillance program to monitor transmitters identified in Item 1 for symptoms of loss of fill-oil.

5. Document and maintain a basis for continued plant operation covering the time period from the present until such time that the Model 1153 Series B, 1153 Series D, and Model 1154 transmitters from the manufacturing lots that have been identified by Rosemount as having a high failure fraction due to loss of fill-oil in use in the reactor protection or engineered safety features actuation systems can be replaced. In addition, while performing the actions requested above, addressees may identify transmitters exhibiting symptoms indicative of loss of fill-oil that do not conform to the established operability acceptance criteria and are not addressed in the technical specifications. As these transmitters are identified, this basis for continued plant operation should be updated to address these transmitters covering the time period from the time these transmitters are identified until such time that these transmitters can be replaced.

8670G

A

NMP1 Response 1a

The above requested actions have been completed as they pertain to Nine Mile Point Unit 1. Thirty five (35) Model 1153 Series B and Model 1153 Series D Rosemount transmitters manufactured prior to July 11, 1989 are currently installed in Nine Mile Point Unit 1 in safety related or ATWS systems. No Model 1154 transmitters are installed at Nine Mile Point Unit 1. Of the 35 Model 1153 Rosemount transmitters, only one level transmitter, LT 36-33, was identified as being from a suspect manufacturing lot. Level transmitter LT 36-33 provides only wide range and flange level water level indication and is not used in a reactor protection system or engineered safety feature application. Therefore a Justification for Continued Operation is not required per NRC Bulletin 90-01.

A review of the last three calibrations for each of the 35 transmitters identified has been performed by site Instrument & Control (I&C) personnel. The review was conducted to determine whether any of these transmitters have exhibited symptoms indicative of loss of fill-oil and make operability determinations as required. Results of the review indicate none of the 35 transmitters have exhibited fill-oil loss symptoms. Therefore no operability determinations were required and no further actions were necessary.

Niagara Mohawk has developed and implemented an enhanced surveillance program for NMP1 Rosemount Transmitters as follows:

Instrument & Control (I&C) personnel have been trained to recognize Rosemount Transmitter fill-oil loss symptoms both during calibration and operation. Training was conducted as part of I&C personnel continued training sessions. The sessions, in part, identified trending techniques such as zero drift, sluggish response, process noise quieting and response to transients. Operations personnel will be trained to identify fill-oil loss symptoms and what actions to take upon identification.

Surveillance and maintenance procedures which affect Rosemount Transmitters have been amended to provide additional direction to I&C personnel. Specifically, I&C technicians will provide as-left and as-found calibration data to the I&C Engineers or I&C Assistant Supervisors prior to final supervisory acceptance of the surveillance results. The as-left/as-found data will then be used to determine transmitter zero drift. Zero drift, as discussed in Rosemount Technical Bulletin No. 4, can indicate a fill-oil loss condition exists. The accumulated zero shift is used to determine the extrapolated useful life of a transmitter.

Transmitters which show symptoms of fill-oil loss will be evaluated for operability. Maintenance Administrative Instruction S-MHI-5.2.1-001, "Enhanced Surveillance for Rosemount Transmitters Suspect of Fill-Oil Loss", provides the procedural guidelines for collecting transmitter data and delineates transmitter operability acceptance criteria. If the transmitter is inoperable and governed by Technical Specifications, the required action statement will be adhered to. If the transmitter is inoperable and not governed by Technical Specifications, a Justification for Continued Operation will be completed. In either case, a work request will be written to replace the transmitter.

In addition, plant I&C and Operations personnel have access to various process computer printouts and strip chart recorders. This information can be used when additional data is required to confirm/disaffirm a fill-oil loss condition.

Reporting Requirement 1b

Identify the indicated manufacturer; the model number; the system the transmitter was utilized in; the approximate amount of time at pressure; the corrective actions taken; and the disposition (e.g. returned to vendor for analysis) of Rosemount Model 1153 Series B, Model 1153 Series D, and Model 1154 transmitters that are believed to have exhibited symptoms indicative of loss of fill-oil or have been confirmed to have experienced a loss of fill-oil. This should include Model 1153 Series B, Model 1153 Series D and Model 1154 transmitters manufactured after July 11, 1989.

NMP1 Response 1b

No Nine Mile Point Unit 1 Rosemount Model 1153 or Model 1154 transmitters have been identified as having exhibited symptoms indicative of loss of fill-oil or have been confirmed to have experienced a loss of fill oil.

Reporting Requirement 1c

Identify the system in which the Model 1153 Series B, 1153 Series D, and Model 1154 transmitters from the manufacturing lots that have been identified by Rosemount as having a high failure fraction due to loss of fill-oil are utilized and provide a schedule for replacement of these transmitters which are in use in the reactor protection or engineered safety features actuation systems.

NMP1 Response 1c

One Nine Mile Point Unit 1 Rosemount transmitter, reactor instrumentation level transmitter LT 36-33, was identified as being from a suspect manufacturing lot. LT 36-33 provides level indication only and is not used in a reactor protection system or engineered safety feature application. LT 36-33 has not exhibited any symptoms of fill-oil loss.

Reporting Requirement 2

Model 1153 Series B, Model 1153 Series D and Model 1154 transmitters that, subsequent to providing the response required by Item 1 above, exhibit symptoms of loss of fill-oil or are confirmed to have experienced a loss of fill-oil should be reviewed for reportability under existing NRC regulations. If determined not to be reportable, addressees are requested to document and maintain, in accordance with existing plant procedures, information consistent with that requested in Item 1 b) above for each transmitter identified.

NMP1 Response 2

Niagara Mohawk has developed Maintenance Administrative Instruction S-MHI-5.2.1-001 "Enhanced Surveillance for Rosemount Transmitters Suspect of Fill-Oil Loss" which:

1) Provides direction in analyzing transmitter calibration results which determine the need for further evaluation,

2) Provides direction for further evaluation of transmitters that are identified as degraded due to fill-oil leakage,

3) Establishes acceptance criteria for transmitters suspected of leaking fill-oil, and

4) Provides the guidelines necessary to make reportability determinations.

Degraded transmitter performance and subsequent replacement will result in a Nuclear Plant Reliability Data System (NPRDS) report. In addition, the degraded transmitter and the following Rosemount documents will be sent to Rosemount:

a) A Rosemount request for failure analysis,

b) A Rosemount nuclear survey form.

Rosemount will be requested to perform additional testing to confirm the loss of fill fluid from the suspect transmitter and to provide the results to Niagara Mohawk. These reporting requirements apply to all Rosemount Model 1153, Model 1152 and Model 1151 transmitters used in safety related or ATWS systems. A file on all safety related/ATWS System Model 1153 transmitters will be maintained by the Maintenance Department. This file will include previous calibrations and records of oil loss calculations.

Attachment B

Nine Mile Point Unit 2

Reporting Requirements for Operating Reactors

Reporting Requirement 1a

Confirm that Items 1, 2, 3, 4, and 5 of Requested Actions for Operating Reactors (as delineated in NRC Bulletin 90-01) have been completed.

NRC Bulletin No. 90-01, requested actions 1, 2, 3, 4, and 5, in general, ask the Licensee to complete the following:

1. Identify Model 1153 Series B, 1153 Series D, and Model 1154 pressure or differential pressure transmitters, excluding Model 1153 Series B, 1153 Series D, and Model 1154 transmitters manufactured by Rosemount subsequent to July 11, 1989, that are currently utilized in either safety-related systems or systems installed in accordance with 10CFR50.62 (the ATWS rule):

2. Determine whether any transmitters identified in Item 1 are from the manufacturing lots that have been identified by Rosemount as having a high failure fraction due to loss of fill-oil. Replace at the earliest appropriate opportunity, transmitters from these suspect lots in use in the reactor protection or engineered safety features actuation systems.

3. Review plant records associated with the transmitters identified in Item 1 above to determine whether any of these transmitters may have already exhibited symptoms indicative of loss of fill-oil. Appropriate operability acceptance criteria should be developed and applied to transmitters identified as having exhibited symptoms indicative of loss of fill-oil from this plant record review. Transmitters identified as having exhibited symptoms indicative of loss of fill-oil that do not conform to the operability acceptance criteria and are not addressed in the technical specifications should be replaced at the earliest appropriate opportunity.

4. Develop and implement an enhanced surveillance program to monitor transmitters identified in Item 1 for symptoms of loss of fill-oil.

5. Document and maintain a basis for continued plant operation covering the time period from the present until such time that the Model 1153 Series B, 1153 Series D, and Model 1154 transmitters from the manufacturing lots that have been identified by Rosemount as having a high failure fraction due to loss of fill-oil in use in the reactor protection or engineered safety features actuation systems can be replaced. In addition, while performing the actions requested above, addressees may identify transmitters exhibiting symptoms indicative of loss of fill-oil that do not conform to the established operability acceptance criteria and are not addressed in the technical specifications. As these transmitters are identified, this basis for continued plant operation should be updated to address these transmitters covering the time period from the time these transmitters are identified until such time that these transmitters can be replaced.

NMP2 Response 1a

The above requested actions have been completed as they pertain to Nine Mile Point Unit 2. No Model 1154 transmitters are installed at Nine Mile Point Unit 2. Two hundred sixty Model 1153 Series B and Model 1153 Series D Rosemount transmitters manufactured prior to July 11, 1989 are currently installed in Nine Mile Point Unit 2 in safety related or ATWS systems. Twenty six (26) transmitters have been identified as being from the Rosemount lots having a high failure fraction. Seven of the 26 transmitters are used in an RPS or ESF application. A Justification for Continued Operation has been completed to document why Nine Mile Point Unit 2 may be safely operated with the seven transmitters installed in ESF/RPS applications. The JCO demonstrates that there is no unacceptable reduction in the degree of protection to the public health and safety based on: 1) the transmitters were determined to be operable using the guidelines in Rosemount Technical Bulletin No. 4, 2) the transmitters will be replaced before the projected operable lifetime is exceeded, and 3) adequate initiation diversity exists. All seven of the transmitters from the suspect lot installed in RPS/ESF applications will be replaced during the 1990 outage.

A review of the latest calibrations for each of the 260 transmitters identified has been performed by site Instrument & Control (I&C) personnel. Because NMP2 has operated less than two years, there are cases where less than three transmitter calibrations exist. In these cases, available calibrations have been used to the extent possible in conjunction with additional information (i.e. shift checks, short cycle calibrations, monthly surveillances). As these transmitters are calibrated, the data will be used in conjunction with initial calibrations to calculate drift. A review was conducted to determine whether any of these transmitters have exhibited symptoms indicative of a loss of fill-oil and make operability determinations as required. The review found one transmitter which showed symptoms of fill-oil loss. This transmitter was declared inoperable, replaced and returned to Rosemount for failure analyses.

Niagara Mohawk has developed and implemented an enhanced surveillance program for Rosemount Transmitters as follows:

Instrument & Control (I&C) personnel have been trained to recognize Rosemount Transmitter fill-oil loss symptoms both during calibration and operation. Training was conducted as part of I&C personnel continued training sessions. The sessions, in part, identified trending techniques such as zero drift, sluggish response, process noise quieting and response to transients. Operations personnel have been trained to identify fill-oil loss symptoms and what actions to take upon identification.

Surveillance and maintenance procedures which affect Rosemount Transmitters have been amended to provide additional direction to I&C personnel. Specifically, I&C technicians will provide as-left and as-found calibration data to the I&C Engineers or I&C Assistant Supervisors prior to final supervisory acceptance of the surveillance results. The as-left/as-found data will then be used to determine transmitter zero drift. Zero drift, as discussed in Rosemount Technical Bulletin No. 4, can indicate a fill-oil loss condition exists. The accumulated zero shift is used to determine the extrapolated useful life of a transmitter.

Transmitters which show symptoms of fill-oil loss will be evaluated for operability. Maintenance Administrative Instruction S-MHI-5.2.1-001 "Enhanced Surveillance for Rosemount Transmitters Suspect of Fill-Oil Loss" provides the procedural guidelines for collecting transmitter data and delineates transmitter operability acceptance criteria. If the transmitter is inoperable and governed by Technical Specifications, the required action statement will be adhered to. If the transmitter is inoperable and not governed by Technical Specifications, a Justification for Continued Operation will be completed. In either case, a work request will be written to replace the transmitter.

In addition, plant I&C and Operations personnel have access to various process computer printouts and strip chart recorders. This information can be used when additional data is required to confirm/disaffirm a fill-oil loss condition.

Reporting Requirement 1b

Identify the indicated manufacturer; the model number; the system the transmitter was utilized in; the approximate amount of time at pressure; the corrective actions taken; and the disposition (e.g. returned to vendor for analysis) of Rosemount Model 1153 Series B, Model 1153 Series D, and Model 1154 transmitters that are believed to have exhibited symptoms indicative of loss of fill-oil or have been confirmed to have experienced a loss of fill-oil. This should include Model 1153 Series B, Model 1153 Series D and Model 1154 transmitters manufactured after July 11, 1989.

NMP2 Response 1b

The following Nine Mile Point Unit 2 Rosemount Transmitters has exhibited symptoms indicative of loss of fill-oil:

Transmitter	System	Model	S/N	Time/Pressure
2RHS*LT28A	Residual Heat Removal	1153DB5	412905	1 Year/ 500 PSI

2RHS*LT28A would not respond to input pressure changes during calibration. The transmitter was declared inoperable, replaced and sent to Rosemount for failure analysis.

Reporting Requirement 1c

Identify the system in which the Model 1153 Series B, 1153 Series D, and Model 1154 transmitters from the manufacturing lots that have been identified by Rosemount as having a high failure fraction due to loss of fill-oil are utilized and provides a schedule for replacement of these transmitters which are in use in the reactor protection or engineered safety features actuation systems.

NMP2 Response 1c

The following twenty six (26) installed transmitters are from the manufacturing lots that have been identified by Rosemount as having a high failure fraction due to loss of fill-oil. The seven transmitters installed in ESF/RPS systems are scheduled for replacement during the 1990 refuel outage.

NMP2 Rosemount Transmitters from Suspect Lot

Transmitter	S/N#	Model #	Function/System	ESF/RPS
CMS*LT9A	414930	1153DB5	SUPPRESSION POOL LEVEL IND ONLY/ CONTAINMENT MONITORING	NO
CMS*LT9B	410488	1153DB5	SUPPRESSION POOL LEVEL IND ONLY/ CONTAINMENT MONITORING	NO
ICS*PT105	411872	1153GB5	RCIC P1 SUCT PRESS REACTOR INSTRUMENTATION	NO
ISC*LT10C	406053	1153DB5	HPCS LOW LOW LV 2 AND HI LV 8/ REACTOR INSTRUMENTATION	YES
ISC*LT13A	411544	1153DB5	FUEL ZONE LEVEL IND ONLY/ REACTOR INSTRUMENTATION	NO
ISC*LT13B	411545	1153DB5	FUEL ZONE LEVEL IND ONLY/ REACTOR INSTRUMENTATION	NO
ISC*LT8A	406066	1153DB5	ATWS. LOW LOW LV 2/ REACTOR INSTRUMENTATION	NO
ISC*LT8B	406064	1153DB5	ATWS. LOW LOW LV 2/ REACTOR INSTRUMENTATION	NO
ISC*PT15A	411671	1153GB5	DRYWELL HI PRESS 1/2 SCRAM RPS/ REACTOR INSTRUMENTATION	YES
ISC*PT15B	411670	1153GB5	DRYWELL HI PRESS 1/2 SCRAM RPS/ REACTOR INSTRUMENTATION	YES
ISC*PT15D	411773	1153GB5	DRYWELL HI PRESS 1/2 SCRAM RPS/ REACTOR INSTRUMENTAITON	YES

Transmitter	S/N#	Model #	Function/System	ESF/RPS
ISC*PT17A	415069	1153GB4	HI DRYWELL PRESS ENABLES RX LOW LV LOGIC/REACTOR INSTRUMENTATION	YES
ISC*PT17B	409780	1153DB5	HI DRY PRESS ENABLES RX LOW LV LOGIC/REACTOR INSTRUMENTATION	YES
RHS*FT64A	410843	1153DB5	SUPP POOL SPRAY RING FLOW IND & ALMS/RESIDUAL HEAT REMOVAL	NO
RHS*FT64B	410844	1153DB5	SUPP POOL SPRAY RING FLOW IND & ALMS/RESIDUAL HEAT REMOVAL	NO
RSS*LT101	411973	1153DB5	RX LEVEL WIDE RANGE IND ONLY/ REMOTE SHUTDOWN	NO
RSS*PT102	410678	1153GB9	INDICATION ONLY RX PRESS/ REMOTE SHUTDOWN	NO
RSS*LT105	407979	1153DB5	SUPPRESSION POOL LEVEL. IND ONLY/ REMOTE SHUTDOWN	NO
SFC*FT58A	414877	1153DB5	P1A DISC FLOW LOW LOW STOPS P1A/ SPENT FUEL POOL COOLING	NO
SWP*FT200A	407980	1153DB5	DISCHARGE FLOW IND ONLY/ SERVICE WATER	NO
SWP*FT200C	407982	1153DB5	DISCHARGE FLOW IND ONLY/ SERVICE WATER	NO
SWP*FT200D	407983	1153DB5	DISCHARGE FLOW IND ONLY/ SERVICE WATER	NO
SWP*FT200E	407984	1153DB5	DISCHARGE FLOW IND ONLY/ SERVICE WATER	NO
SWP*FT200F	407985	1153DB5	DISCHARGE FLOW IND ONLY/ SERVICE WATER	NO
SWP*FT201A	407986	1153DB5	RHS HEAT EX E1A ONLY/ SERVICE WATER	NO
WCS*FT69Y	414741	1153DB5	CLEANUP FLOW TO MAIN CONDENSER/ RADWASTE/REACTOR CLEANUP	YES

Reporting Requirement 2

Model 1153 Series B, Model 1153 Series D and Model 1154 transmitters that, subsequent to providing the response required by Item 1 above, exhibit symptoms of loss of fill-oil or are confirmed to have experienced a loss of fill-oil should be reviewed for reportability under existing NRC regulations. If determined not to be reportable, addressees are requested to document and maintain, in accordance with existing plant procedures, information consistent with that requested in Item 1 b) above for each transmitter identified.

NMP2 Response 2

Niagara Mohawk has developed Maintenance Administrative Instruction S-MHI-5.2.1-001 "Enhanced Surveillance for Rosemount Transmitters Suspect of Fill-Oil Loss" which:

1) Provides direction in analyzing transmitter calibration results which determine the need for further evaluation,

2) Provides direction for further evaluation of transmitters that are identified as degraded due to fill-oil leakage,

3) Establishes acceptance criteria for transmitters suspected of leaking fill-oil, and

4) Provides the guidelines necessary to make reportability determinations.

Degraded transmitter performance and subsequent replacement will result in a Nuclear Plant Reliability Data System (NPRDS) report. In addition, the degraded transmitter and the following Rosemount documents will be sent to Rosemount:

a) A Rosemount request for failure analysis,

b) A Rosemount nuclear survey form.

Rosemount will be requested to perform additional testing to confirm the loss of fill fluid from the suspect transmitter and to provide the results to Niagara Mohawk. These reporting requirements apply to all Rosemount Model 1153, Model 1152 and Model 1151 transmitters used in safety related or ATWS systems. A file on all safety related/ATWS System Model 1153 transmitters will be maintained by the Maintenance Department. This file will include previous calibrations and records of oil loss calculations.