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 PLUNKETT, T.F.      Florida Power & Light Co.  
 RECIP. NAME      RECIPIENT AFFILIATION  
                  Document Control Branch (Document Control Desk)

SUBJECT: Forwards response to Suppl 1 to NRC Bulletin 90-001, "Loss of Fill-Oil in Transmitters Mfg by Rosemount." Only two transmitters in Action Category 1.b identified as having reached time-at-pressure maturity.

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FPL

P.O. Box 029100, Miami, FL, 33102-9100

MAR 03 1993

L-93-41  
10 CFR 50.54(f)

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

Gentlemen:

Re: Turkey Point Units 3 and 4  
Docket Nos. 50-250 and 50-251  
NRC Bulletin 90-01, Supplement 1  
Loss of Fill-Oil in Transmitters  
Manufactured by Rosemount

NRC Bulletin 90-01, Supplement 1, "Loss of Fill-Oil in Transmitters Manufactured by Rosemount", issued December 22, 1992, requested that licensees take appropriate corrective actions for Rosemount transmitters which may be leaking fill-oil. NRC Bulletin 90-01, Supplement 1, includes all Model 1153 Series B, Model 1153 Series D, and Model 1154 transmitters manufactured by Rosemount before July 11, 1989. In accordance with the bulletin, Florida Power and Light Company (FPL) provides the attached response relative to the Turkey Point Plant.

Should there be any questions concerning this response, please contact us.

Very truly yours,

T. F. Plunkett  
Vice President  
Turkey Point Nuclear

Attachment

TFP/OIH

cc: Stewart D. Ebnetter, Regional Administrator, Region II, USNRC  
R. C. Butcher, Senior Resident Inspector, USNRC, Turkey  
Point Plant

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STATE OF FLORIDA           )  
                                  ) ss.  
COUNTY OF DADE )

T. F. Plunkett being first duly sworn, deposes and says:

That he is Vice President, Turkey Point Nuclear,  
of Florida Power and Light Company, the Licensee herein;

That he has executed the foregoing document; that the statements  
made in this document are true and correct to the best of his  
knowledge, information and belief, and that he is authorized to  
execute the document on behalf of said Licensee.

*T. F. Plunkett*  
T. F. Plunkett

Subscribed and sworn to before me this  
3 day of MARCH, 1993.

*Cheryl A Kelly*  
Name of Notary Public (Type or Print)  
NOTARY PUBLIC, in and for the County of  
Dade, State of Florida



My Commission expires \_\_\_\_\_  
Commission No. \_\_\_\_\_

T. F. Plunkett is personally known to me.



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RECEIVED  
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HEADQUARTERS  
WASHINGTON, D.C.

NRC BULLETIN 90-01, SUPPLEMENT 1  
"Loss of Fill Oil in Transmitters Manufactured by Rosemount"

Background

In March 1990, the NRC issued I&E Bulletin 90-01, "Loss of Oil Fill in Transmitters Manufactured by Rosemount." This bulletin identified a mechanism whereby the transmitter sensing module could gradually lose sensing oil required for transmitter operation. Bulletin 90-01 issue was primarily directed towards suspect lots of transmitters that exhibited this loss of oil phenomenon. Further analysis conducted by Rosemount and by Nuclear Management and Resources Committee (NUMARC) has shown that this phenomenon is of concern for all Rosemount Model 1153 Series B, Model 1153 Series D, and Model 1154 transmitters manufactured before July 11, 1989, that are used in high or medium pressure applications.

Supplement 1 of NRC Bulletin 90-01 expands on the original bulletin and specifies required actions for all Rosemount Model 1153 Series B, Model 1153 Series D, and Model 1154 transmitters manufactured before July 11, 1989. FPL's response to the specified reporting requirements relative to Turkey Point Units 3 and 4 is provided below.

Reporting Requirement 1

Provide within 60 days after receipt of this bulletin, a response that includes the following:

1. A statement whether the licensee will take the actions requested above.

FPL Response

FPL intends to take the actions described below.

Reporting Requirement 2.a

Provide within 60 days after receipt of this bulletin, a response that includes the following:

2. With regard to the actions requested above that the licensee is taking:





- a. (Provide) a list of the specific actions that the licensee will complete to meet Item 1 of Requested Actions for Operating Reactors provided in this supplement, including justifications as appropriate.

FPL Response

FPL's actions are described below for each portion of Requested Action Item 1:

- a. Requested Action Item 1.a.

FPL has identified all safety related Rosemount Model 1153 Series B, Model 1153 Series D, and Model 1154 transmitters manufactured before July 11, 1989, that have a normal operating pressure greater than 1500 psig and that are installed in reactor protection trip systems, Engineered Safety Features (ESF) actuation systems or Anticipated Transient Without Scram (ATWS) systems. FPL will monitor on a monthly basis using an enhanced surveillance program until replaced or until they reach their appropriate psi-month "mature" threshold, the transmitters within Action Category 1.a. Since none of these transmitters is considered "mature", justification for other than a monthly surveillance program has not been developed at this time, but will be developed should FPL choose to exercise this option in the future.

- b. Requested Action Item 1.b.

FPL has identified all safety related Rosemount Model 1153 Series B, Model 1153 Series D, and Model 1154 transmitters manufactured before July 11, 1989, that have a normal operating pressure greater than 1500 psig and that are used in safety related applications but are not installed in reactor protection trip systems, ESF actuation systems or ATWS systems. FPL will monitor the transmitters within Action Category 1.b on a quarterly basis using an enhanced surveillance program until replaced or until they reach their appropriate psi-month "mature" threshold.

Only two transmitters in Action Category 1.b were identified as having reached time-at-pressure "maturity"; these transmitters are Rosemount 1153 Series D units of Range Code 5. LT-3-462 has accumulated 115,000 psi-months of operation, and LT-4-462 has accumulated 155,000 psi-months. These times far exceed the criterion of 60,000 psi-months specified by Rosemount, and neither transmitter has exhibited any oil-loss symptoms. These two transmitters



will be placed in the category of transmitters which will be subject to a refueling basis surveillance.

c. Requested Action Item 1.c.

FPL has identified all safety related Rosemount Model 1153 Series B, Model 1153 Series D, and Model 1154 transmitters manufactured before July 11, 1989, that have a normal operating pressure greater than 500 psig but less than 1500 psig and that are installed in reactor protection trip systems, ESF actuation systems or ATWS systems. FPL will monitor the transmitters within Action Category 1.c at least once every refueling cycle, but not exceeding 24 months, using an enhanced surveillance program until replaced or until they reach their appropriate psi-month "mature" threshold.

d. Requested Action Item 1.d.

FPL has identified all safety related Rosemount Model 1153 Series B, Model 1153 Series D, and Model 1154 transmitters manufactured before July 11, 1989, that have a normal operating pressure greater than 500 psig but less than 1500 psig that perform safety related functions but are not installed in reactor protection trip systems, ESF actuation systems or ATWS systems. FPL will monitor the transmitters within Action Category 1.d at least once every refueling cycle, but not exceeding 24 months, using an enhanced surveillance program until replaced or until they reach their appropriate psi-month threshold.

e. Requested Action Item 1.e.

FPL will exclude from the enhanced surveillance program all safety related transmitters that have a normal operating pressure greater than 500 psig and less than or equal to 1500 psig once they have reached the appropriate psi-month "mature" threshold criterion recommended by Rosemount.

f. Requested Action 1.f.

Rosemount Technical Bulletin No. 4, dated December 22, 1989, confirms a strong relationship between the accumulated time at pressure for transmitter failures and their operating pressure. Rosemount Technical Bulletin No. 4 reports an acceptably low risk of transmitter failure for operating pressures below 250 psig. On this basis, FPL will exclude from the enhanced surveillance program all safety related transmitters that have normal operating pressures less than or equal to 250 psig. Safety related transmitters that have



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normal operating pressures greater than 250 psig and less than or equal to 500 psig have been excluded from the enhanced surveillance program based on other bulletin criteria.

Reporting Requirement 2.b

Provide within 60 days after receipt of this bulletin, a response that includes the following:

2. With regard to the actions requested above that the licensee is taking:
  - b. (Provide) the schedule for completing licensee actions to meet Item 1 of the Requested Actions provided in this supplement.

FPL Response

FPL will implement the enhanced surveillance program for Turkey Point Units 3 and 4 by April 7, 1993.

Reporting Requirement 2.c

Provide within 60 days after receipt of this bulletin, a response that includes the following:

2. With regard to the actions requested above that the licensee is taking:
  - c. When completed, (provide) a statement confirming that Items 1 and 2 of the Requested Actions for Operating Reactors provided in this supplement have been completed.

FPL Response

FPL will notify the NRC within 60 days of the completion of Requested Action Items 1 and 2 for both Turkey Point units.

Reporting Requirement 3

Provide within 60 days after receipt of this bulletin, a response that includes the following:

3. A statement identifying those actions requested by the NRC that the licensee is not taking and an evaluation which provides the bases for not taking the requested actions.

FPL Response

FPL has excluded certain Rosemount transmitters from the requirements of the plant enhanced surveillance program and does not consider that this group of transmitters fall within the focus of the bulletin. In addition to those Rosemount transmitters excluded from the enhanced surveillance program based on the exclusionary criteria established within the bulletin itself, transmitters whose safety classification falls within the FPL "Not Nuclear Safety" and "Quality Related" classifications were excluded from the scope of the enhanced surveillance program.

Other transmitters have been eliminated from the list after a specific review of the safety functions performed by the transmitter; based on the level of instrument diversity available to operators; and/or based on the extent to which operators rely on these transmitters in normal and emergency plant procedures. The listing of these transmitters is contained in Attachment 2. A technical justification for the elimination of each of these transmitters (or group of transmitters) is included in Attachment 2. We believe that exclusion of these transmitters from the enhanced surveillance provisions recommended by the NRC bulletin is consistent with the focus of the bulletin and appropriate for the associated transmitter system functions.



ROSEMOUNT TRANSMITTER LIST WITH NO ENHANCED SURVEILLANCE REQUIREMENTS  
BASED ON SAFETY FUNCTION

TAG NUMBER	UNIT	SERVICE DESCRIPTION	MODEL	SERIES	SYSTEM PRESSURE	NOTE
FT-3-122	3	Charging Pump Discharge Flow	1153	HB5	High	6
FT-3-124	3	Reactor Coolant Pump (RCP) C Seal Injection Flow	1153		High	4
FT-3-127	3	RCP B Seal Injection Flow	1153		High	4
FT-3-933	3	Safety Injection (SI) Flow to Hot Leg	1153	HD5	High	1
FT-3-943	3	SI Header Flow	1153	HB6	High	1
PT-3-121	3	Charging Pump Pressure	1153	GB9	High	5
PT-3-125	3	RCP C Seal Differential Pressure	1153	HD4	High	3
PT-3-128	3	RCP B Seal Differential Pressure	1153	HD4	High	3
PT-3-131	3	RCP A Seal Differential Pressure	1153	HD4	High	3
PT-3-154	3	RCP C Seal Injection Flow	1153	DD8	High	2
PT-3-155	3	RCP B Seal Injection Flow	1153	DD8	High	2
PT-3-156	3	RCP A Seal Injection Flow	1153	DD8	High	2
PT-3-402	3	RCS B Hot Leg Pressure	1153	GD9	High	7
PT-3-940	3	SI Pump Header Pressure	1153	GB9	High	1
PT-3-943	3	SI Header Pressure	1153	GB9	High	1
PT-4-121	4	Charging Pump Pressure	1153	GB9	High	5
PT-4-125	4	RCP C Seal Differential Pressure	1153	HD4	High	3
PT-4-128	4	RCP B Seal Differential Pressure	1153	HD4	High	3
PT-4-131	4	RCP A Seal Differential Pressure	1153	HD4	High	3
PT-4-402	4	RCS B Hot Leg Pressure	1153	GD9	High	7



ROSEMOUNT TRANSMITTER LIST  
WITH NO ENHANCED SURVEILLANCE REQUIREMENTS  
BASED ON SAFETY FUNCTION

EXPLANATORY NOTES

1. Small Accumulated Time-At-Pressure History -

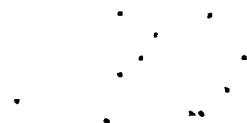
Transmitters used in system applications below 1500 psig, which have very little pressure history (i.e., standby mode not exposed to normal system design pressures) have been eliminated from the listing based on recommendations from Rosemount Technical Bulletin No.4.

2. The following engineering justification provides a basis and documents that no enhanced surveillance requirements are required for the indicated transmitters.

PT-3-154 - RCP C Seal Bypass to #1 Seal Leakoff DP  
PT-3-155 - RCP B Seal Bypass to #1 Seal Leakoff DP  
PT-3-156 - RCP A Seal Bypass to #1 Seal Leakoff DP

These Model 1153 Series D transmitters are used to measure the pressure gradient for seal bypass to seal leakoff for the #1 seal of the reactor coolant pumps (RCPs). Each Differential Pressure Transmitter (DPT) is part of an instrument loop that provides local and control room indication of these pressures. A signal comparator is also in the current loop which provides annunciation of low flow. This annunciator is located in Panel A window 6/4 and labelled as "Reactor Coolant Pumps Shaft Seal Water Low delta P".

Since these transmitters are connected to the reactor coolant system pressure boundary, they are classified as safety related. Their function is to measure the pressure difference across the #1 RCP seal which is the primary pump seal. Low differential pressure is an indication of either insufficient reactor coolant system (RCS) pressure to maintain the film opening of the #1 seal or of degradation of the #1 seal. With respect to insuring sufficient RCS pressure to permit seal operation, plant operating procedures (3/4-OP-041.1) require that the seal DP be verified greater than 225 psid and that RCS pressure is greater than 325 psig. RCS pressure indication provides a diverse means of insuring that sufficient pressure is available to permit pump operation. With respect to indication of seal degradation, diversity is provided in the form of seal leakoff flow indication and annunciation and seal leakoff temperature indication.



These pressure transmitters are also used by the operators in the Emergency Operating Procedures (EOPs) in determining whether or not to restart a RCP. It should be noted that the RCP motors are not considered safety related and cannot be powered from on-site power. No credit is taken for the RCPs being available to mitigate the consequences of accidents; however, they are desirable in responding to certain plant events.

Based on the above discussion, and on the fact the indication provided is not redundant, PT-3-154, 155, and 156 are considered safety related for pressure boundary only. The indication provided is important in detecting early signs of seal degradation but is not necessary to prevent or mitigate the consequences of design basis accidents. Accordingly, this equipment need not be placed in an enhanced surveillance program to comply with Bulletin 90-01 Supplement 1.

3. The following engineering justification provides a basis and documents that no enhanced surveillance requirements are required for the indicated transmitters.

PT-\*-125 - RCP C Thermal Barrier DP  
PT-\*-128 - RCP B Thermal Barrier DP  
PT-\* 131 - RCP A Thermal Barrier DP

These Model 1153 Series D transmitters are used to measure the differential pressure (DP) across the reactor coolant pump (RCP) thermal barrier as a measure of proper seal injection operation. These devices are in instrument loops that provide control room indication. A signal comparator is also in the loop which provides annunciation of low differential pressure. This annunciator is located in Panel A window 6/5 and labelled as "RCP Labyrinth Seal Lo DP."

Since these transmitters are connected to the reactor coolant system (RCS) pressure boundary, they are classified as safety related. Their function is to measure the pressure difference across the RCP thermal barrier. Low differential pressure is an indication of either insufficient seal injection flow or of a #1 seal failure. Alternate indication of proper seal injection operation is provided by the individual RCP seal injection flow transmitters (provided with Emergency Response Data Acquisition and Display System (ERDADS) indication) and by the #1 seal leakoff DP indication. Indication of a #1 seal failure is provided by high seal leakoff flow and temperatures.

Based on the above discussion, and on the fact the indication provided is not redundant, PT-\*-125, 128, and 131 are considered safety related for pressure boundary only.

The indication provided is important in detecting early signs of seal degradation and loss of seal injection but is not necessary to prevent or mitigate the consequences of design basis accidents. Accordingly, this equipment need not be placed in an enhanced surveillance program to comply with Bulletin 90-01 Supplement 1.

4. The following engineering justification provides a basis and documents that no enhanced surveillance requirements are required for the indicated transmitters.

FT-3-124 - RCP C Seal Injection Flow  
FT-3-127 - RCP B Seal Injection Flow

These Model 1153 Series D transmitters provide Emergency Response Data Acquisition and Display System (ERDADS) indication of proper seal injection flow to the reactor coolant pump (RCP) seals. Since these transmitters are connected to a safety related pressure boundary, they are considered safety related for pressure boundary reasons. However, ERDADS is not considered a safety related system and the indication provided is as an operator aid only. Accordingly, these transmitters are considered to perform a not nuclear safety related indication function and may be eliminated from the enhanced surveillance program described in Bulletin 90-01 Supplement 1.

5. PT-3-121 - Charging Pump Pressure  
PT-4-121 - Charging Pump Pressure

These Model 1153 Series B transmitters provide non-redundant control room indication of charging system discharge pressure. Since these transmitters are connected to a safety related pressure boundary they are classified as safety related for pressure boundary reasons. While indication is provided in the control room, no reliance is placed on this indication in either the emergency, off-normal (ONOP-47.1), or normal operating procedures (OP-47.1) used by the operator. Other instrumentation is used to annunciate abnormal or degrading conditions related to the charging system.

Accordingly, since this indication is non-redundant and is not relied upon to prevent or mitigate the consequences of an accident, it is not considered to perform an active safety related function.

6. FT-3-122 - Charging Pump Discharge Flow

This Model 1153 Series B transmitter provides non-redundant local and control room indication of charging system flow to the Reactor Coolant System (RCS). Since this transmitter is connected to a safety related pressure boundary, it is



classified as safety related for pressure boundary reasons. This indication is called out in the normal (OP-47.1) and off-normal (ONOP-47.1) procedures for trouble shooting charging system problems. Other instrumentation is used to annunciate abnormal or degrading conditions related to the charging system. FT-122 is discussed in the Chemical and Volume Control System Design Basis Document and has no identified safety related functions.

Accordingly, since this indication is not redundant and is not relied upon to prevent or mitigate the consequences of an accident, it is not considered to perform a safety related function.

7. PT-3-402 - RCS B Hot Leg Pressure  
PT-4-402 - RCS B Hot Leg Pressure

These Model 1153 Series D transmitters provide control room indication and annunciation related to the operation of the Overpressure Mitigating System (OMS). Since this transmitter is connected to a safety related pressure boundary, it is classified as safety related for pressure boundary reasons. This transmitter is scaled for operation between 0 - 1000 psig to cover the range of interest for OMS operation. Annunciation is provided when RCS pressure reaches 400 psig and thus is approaching the OMS system actuation setpoint. Annunciation is also derived on OMS low pressure operation as an indication of improper OMS alignment. The OMS system is actuated by separate transmitters.

Accordingly, since this transmitter provides only indication and annunciation of concerns with the OMS system, and does not impact the operability of the OMS system, it is not considered to perform a safety related function.

