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March 30, 1992

Docket No. 50-461

Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

Subject: Clinton Power Station (CPS)  
Follow-Up Response to Bulletin 90-01

Dear Sir:

On March 9, 1990 the NRC staff issued NRC Bulletin No. 90-01 which was entitled "Loss of Fill-Oil in Transmitters Manufactured by Rosemount". The bulletin alerted addressees to a potential common mode failure that can occur with certain Rosemount transmitters due to a gradual loss of fill-oil from the transmitters' sealed sensing modules.

Illinois Power (IP) provided its response to Bulletin 90-01 via IP letter U-601707 dated July 19, 1990. In its response, IP made several commitments which included testing and replacing transmitters. On December 23, 1991, IP participated in a conference call with the NRC Project Manager for CPS and an NRC staff member assisting in the review of the IP response to Bulletin 90-01. The purpose of this conference call was to discuss a number of questions regarding particular statements and commitments made in IP's response to the Bulletin. This letter and its attachments provide documented responses to the NRC staff questions identified in the December conference call in an effort to facilitate closure of IP's response to Bulletin 90-01.

IP has fulfilled all the commitments for testing and replacement of transmitters identified in its original response to Bulletin 90-01. With the completion of the committed activities, and the resolution of the questions from the staff, IP believes it has addressed all the concerns associated with the failure of Rosemount transmitters due to a loss of fill-oil and that no additional actions are required.

Sincerely yours,

*F. A. Spangenberg, III*  
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Manager, Licensing & Safety

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Attachments

cc: NRC Clinton Licensing Project Manager  
NRC Resident Office  
Regional Administrator, Region III, USNRG  
Illinois Department of Nuclear Safety

NRC Bulletin 90-01 requested that holders of operating licenses for nuclear power reactors identify and take appropriate corrective actions for Rosemount transmitters (Model 1153 Series E and D, and Model 1154) that are susceptible to failure due to leakage of fill-oil. In addition, the NRC staff requested that each licensee take several specific actions, as identified in Bulletin 90-01, to address the potential for undetected transmitter failures due to a loss of fill-oil. IP completed an investigation to identify all the Rosemount transmitters that may have been failing or had the potential to fail due to a loss of fill-oil and documented the results in IP letter U-601707, dated July 19, 1990. In the referenced letter, IP also committed (including the required action and completion date) to complete those NRC requested actions not completed at the time of submittal.

Recently, as a result of the NRC staff's review of IP's original response to Bulletin 90-01 (i.e., the above-referenced letter), several questions were asked by the NRC staff regarding particular statements and commitments made by IP. Although IP indicated that all actions committed to in its July 19, 1990 letter have been completed or implemented, a written followup response was requested for those questions or actions related to transmitter replacement issues. The following provides and documents IP's response for these questions or actions.

In Bulletin 90-01, the NRC required the identification of all Rosemount transmitters (Model 1153 Series B and D, and Model 1154) manufactured prior to July 11, 1989 that were being utilized in either safety-related systems or Anticipated Transient Without Scram (ATWS) applications. IP's evaluation in response to Bulletin 90-01 resulted in the identification of 228 Rosemount transmitters which were used in safety-related systems or ATWS applications at CPS. The original IP response to Bulletin 90-01 provided a complete listing of the transmitters in question.

Following the identification of all the Rosemount transmitters in question, each licensee was required to determine whether any transmitters identified were from the manufacturing lots that had been identified by Rosemount as having a high failure fraction due to loss of fill-oil. In the original response to Bulletin 90-01, IP identified twenty-four Rosemount transmitters from the manufacturing lots identified by Rosemount as having a high failure fraction due to loss of fill-oil. Of these suspect transmitters, IP identified seventeen as being used in either Engineered Safety Feature (ESF) or Reactor Protection (RP) Systems and committed to replace these transmitters prior to the completion of the second refueling outage in accordance with requested action No. 2 of Bulletin 90-01. Following submittal of IP's response to the bulletin, IP was asked to confirm that these seventeen transmitters had been replaced as intended. IP has verified that the last of these seventeen transmitters was replaced on January 9, 1991. A Quality Assurance department surveillance confirmed that the transmitters requiring replacement had in fact been replaced. Attachment 2 provides the list of suspect transmitters which were replaced.

The NRC noted that the remaining seven transmitters were not identified for replacement despite the fact they are part of an ESF system or a system installed in accordance with 10CFR50.62. IP was asked to confirm that these transmitters were replaced or to provide a justification for not replacing the transmitters in question. IP evaluated the remaining seven suspect

transmitters and determined it was not necessary to replace them to complete the requested NRC action in Bulletin 90-01. Transmitters 1E12-N015B (RHR B Flow), 1E12-N003 (LPCS Pump Discharge Flow), 1E22-N005 (HPCS Flow), 1PT-CM264 (RPV Pressure Low Range), and 1PT-CM265 (RPV Pressure Low Range) are used for indication only and perform no actuation or interlock function. Transmitter 1E51-N053 (RCIC Pump Suction Pressure) monitors the RCIC pump suction pressure and provides an annunciation in the main control room as well as a RCIC turbine trip on decreasing suction pressure. This signal is a protective action for the pump and is not considered an ESF actuation. The last of the above seven suspect transmitters not included in the replacement list was transmitter 1B21-N400B (RPV Level ATWS Channel B). Since the ATWS system is not part of the Reactor Protection System and is not an Engineered Safety Features actuation system, this transmitter was not identified for replacement. Notwithstanding, the ATWS transmitter in question was replaced in January 1991 because of external physical damage caused during calibration.

In addition to the above actions, Bulletin 90-01 required that licensees review plant records associated with the transmitters to determine whether any of these transmitters may have already exhibited symptoms indicative of loss of fill-oil. As documented in the original IP response to Bulletin 90-01, eleven transmitters were identified as requiring time-response testing to determine if drift was associated with fill-fluid failure. IP's response to the bulletin indicated that four of the eleven transmitters had been time-response tested and had passed the acceptance criteria requirements. In addition, two of the transmitters (1B21-N091E and 1B21-N091F) were scheduled to be replaced prior to completion of forced outage thirteen (FO-13). The NRC asked IP to confirm that these two transmitters were replaced, and IP has since verified that the two transmitters in question were replaced (as indicated in Attachment 2 to this letter). Since five of the transmitters could not be time-response tested at the time of IP's response to Bulletin 90-01, a Basis for Continued Operation (BCO) was prepared for each transmitter, and IP committed to testing these transmitters prior to the second refueling outage. Subsequent to the IP response to Bulletin 90-01, the NRC asked that IP provide the results of the response-time testing performed on the transmitters not tested at the time of the original response. IP has completed the response-time testing, and the following identifies the results of that testing:

<u>EIN</u>	<u>Test Result</u>	<u>Action Taken</u>
1B21-N081A	Failed	Replaced per MWR D15078, 8/25/90
1B33-N014D	Failed	Replaced per MWR D15084, 9/28/90
1B21-N080A	Failed	Replaced per MWR D15086, 8/24/90
1B21-N073G	Passed	Tested per MWR D15077, 10/18/90
1LT-CM030	Passed	Tested per MWR D15116, 10/16/90

It should be noted that although transmitter 1B21-N073G passed the response time test, it was subsequently replaced due to physical damage caused during testing.

LIST OF REPLACED SUSPECT TRANSMITTERS USED IN ENGINEERED  
SAFETY FEATURES OR REACTOR PROTECTION SYSTEM APPLICATIONS

<u>EIN</u>	<u>Serial Number</u>	<u>Service</u>	<u>Date Replaced</u>	<u>MWR</u>
1B21-N091E	408299	RPV Level (WR) (LPCS, RCIC, ADS)	07/19/90	D15079
1B21-N091F	408300	RPV Level (WR)	07/19/90	D15083
1E31-N075B	408311	RWCU Line to Main Condenser	10/20/90	D15131
1E31-N076B	408313	RWCU Inlet Flow	10/20/90	D15133
1PDT-VG145	415106	Containment Pressure Train A	10/24/90	D15137
1B21-N073H	407641	RPV Level (WR) HPCS	10/31/90	D15119
1B33-N024D	408308	RX RCRC Pump 1B Suction	11/07/90	D15129
1E31-N075A	408310	RWCU Line to Main Condenser	11/15/90	D15130
1E31-N076A	408312	RWCU Inlet Flow	11/15/90	D15132
1E31-N077A	408314	RWCU Line to RX Vessel	11/15/90	D15134
1B21-N081C	408295	RPV Level (WR) NSSSS	11/17/90	D15122
1B21-N091B	408298	RPV Level (WR)	11/19/90	D15123
1B33-N014B	408302	RX RCRC Pump 1A Suction	12/05/90	D15126
1B33-N014C	408303	RX RCRC Pump 1A Suction	12/07/90	D15127
1B33-N024C	408307	RX RCRC Pump 1B Suction	12/08/90	D15128
1E31-N083A	415211	RCIC Steam Supply Flow Outboard Isolation	12/15/90	D15135
1E51-N003	408088	RCIC Pump Discharge Flow	01/09/91	D15136