NRC 2003-0048 10 CFR 50.73

May 28, 2003

U. S. Nuclear Regulatory Commission
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POINT BEACH NUCLEAR PLANT UNIT 2
DOCKET 50-301
LICENSEE EVENT REPORT 301/2003-003-00
FAILURE TO PLACE INSTRUMENT CHANNEL IN TRIP AS SPECIFIED BY
LCO 3.3.1 REQUIRED ACTION D.1

Enclosed is Licensee Event Report (LER) 301/2003-003-00 for Point Beach Nuclear Plant Unit 2. The subject condition does not meet the criteria for required reporting; however, it is of generic interest and is being submitted voluntarily per the guidance of NUREG-1022, Sections 2.7 and 5.1.4. This LER discusses the failure to place a feedwater flow instrumentation channel in trip within one hour as specified in Technical Specifications (TS). The channel was restored to operable status within the time allowed by the TS; therefore, the TS requirements were met.

Corrective actions, completed and proposed, have been identified in the enclosed report. There are no new commitments in this report.

If you have any questions concerning the information provided in this report, please contact Mr. C. W. Krause at (920) 755-6809.

A. J. Cayia
Site Vice President

JG/kmd

Enclosure

cc: NRC Regional Administrator
NRC Project Manager
NRC Resident Inspector
PSCW

IE22

NRC FORM 366 (7-2001) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 7-31-2004

Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
POINT BEACH NUCLEAR PLANT UNIT 2	05000301	1 OF 5

TITLE (4)
FAILURE TO PLACE INSTRUMENT CHANNEL IN TRIP AS SPECIFIED BY LCO 3.3.1 REQUIRED ACTION D.1

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER 05000
04	08	2003	2003	¥ 003	¥ 00	05	28	2003	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	2
POWER LEVEL (10)	0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) (11)

20.2201(b)	20.2203(a)(3)(ii)	50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)
20.2201(d)	20.2203(a)(4)	50.73(a)(2)(iii)	50.73(a)(2)(x)
20.2203(a)(1)	50.36(c)(1)(i)(A)	50.73(a)(2)(iv)(A)	73.71(a)(4)
20.2203(a)(2)(i)	50.36(c)(1)(ii)(A)	50.73(a)(2)(v)(A)	73.71(a)(5)
20.2203(a)(2)(ii)	50.36(c)(2)	50.73(a)(2)(v)(B)	X OTHER Specify in Abstract below or in NRC Form 366A
20.2203(a)(2)(iii)	50.46(a)(3)(ii)	50.73(a)(2)(v)(C)	
20.2203(a)(2)(iv)	50.73(a)(2)(i)(A)	50.73(a)(2)(v)(D)	
20.2203(a)(2)(v)	50.73(a)(2)(i)(B)	50.73(a)(2)(vii)	
20.2203(a)(2)(vi)	50.73(a)(2)(i)(C)	50.73(a)(2)(viii)(A)	
20.2203(a)(3)(i)	50.73(a)(2)(ii)(A)	50.73(a)(2)(viii)(B)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Charles Wm. Krause, Senior Regulatory Compliance Engineer	(920) 755-6809

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE).	X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On April 8, 2003, reactor startup was in progress. With Unit 2 in MODE 2, a steam generator (SG) feedwater (FW) flow alarm from flow indicator 2FI-466 was received. Although not known at the time, the water in the sensing line of this flow indicator had flashed, causing it to indicate erroneously. The FW system was secured at the time; therefore, there was no actual FW flow through the flow sensor. This FW flow indicator provides one of the required channels of input specified in Technical Specification (TS) 3.3.1, RPS Instrumentation. The FW flow alarm provided indication that this channel may have been inoperable. However, operators' attention and focus was on activities associated with reactor criticality and they did not recognize the significance of the alarm nor the associated flow indication. Operators did not discern the significance of this condition until about two and one-half hours after receipt of the initial alarm. Consequently, the one hour Completion Time for the TS Required Action to place an inoperable channel in trip had already elapsed. Plant technicians placed the channel in trip and refilled the instrument sensing line within one hour of the operators' recognition of this condition. Although the channel was not placed in trip within one hour of receipt of the initial alarm, it was restored to operable status within the seven hours allowed by the TS to exit the MODE of applicability. Therefore, the requirements of TS 3.3.1 were met. While no TS violation occurred, the initial operator response to this condition was not appropriate.

Event Description:

On April 8, 2003, Point Beach Nuclear Plant (PBNP) Operators were performing a normal startup of the Unit 2 reactor {RCT}. At approximately 0205 (all times are CDT), Unit 2 exited MODE 3 and entered MODE 2.

At about 0320, the "A" steam generator {SG} feedwater flow alarm {FFA} was received. This alarm was due to the output from "A" feedwater indicator {FI}, 2FI-466, changing from 0 to approximately 0.7×10^6 lbm/h. The feedwater system {SJ} was secured at this time; therefore, the actual feedwater flow was 0. Although not known at the time, the water in the sensing line of this flow indicator had flashed, causing it to indicate erroneously.

This feedwater flow indicator provides one of the required channels {CHA} of input specified in Technical Specifications (TS) Table 3.3.1-1, Function 14, when the reactor is in MODES 1 or 2. The alarm provided an indication that this channel may not be operable.

However, the operators' attention and focus was on the activities associated with reactor criticality and they did not recognize the significance of the alarm nor the associated flow indication. As a result, operators were not aware that Condition D of LCO 3.3.1 had been entered.

At about 0550, operators discerned the significance of this condition during a review of their logs. With no actual feedwater flow (due to the system being secured), feedwater flow indicator 2FI-466 was still indicating approximately 0.7×10^6 lbm/h. Consequently, the channel was declared inoperable and LCO 3.3.1, Required Action A.1, was performed immediately, in accordance with the TS. This action consisted of entering Condition D, as referenced in Table 3.3.1-1 for the feedwater flow portion of function 14. The Required Action for Condition D is to place the channel in trip in 1 hour or be in MODE 3 in 7 hours.

Operators recognized that entry into Condition D had potentially occurred approximately two and one-half hours earlier, upon receipt of the flow alarm. Based on this characterization, the one hour Completion Time for Required Action D.1 to place the channel in trip had already elapsed.

The prompt investigation into this condition quickly identified that the instrument sensing line required filling. Plant technicians placed the channel in trip and refilled the instrument sensing line within one hour of the operators' recognition of this condition. Refilling the sensing line restored the flow indication to 0.

At about 0759, testing was completed and feedwater indicator 2FI-466 was restored to operable status. As a result, LCO 3.3.1, Conditions A and D, were exited about four and one-half hours after receipt of the initial alarm, and within two hours of recognition of this situation.

Although the channel was not placed in trip within one hour of receipt of the initial alarm, it was restored to operable status within the seven hours allowed by the TS to exit the MODE of applicability. Therefore, the requirements of TS 3.3.1, RPS Instrumentation, were met.

While no TS violation occurred, the initial operator response to this condition was not appropriate. The significance of the feedwater flow alarm was not recognized and therefore, appropriate actions, as specified

in TS 3.3.1, were not promptly initiated. The intent of the two allowable Required Actions in LCO 3.3.1, Condition D, was to provide alternative paths of action if one of the paths was undesirable or unable to be complied with. As such, if a channel was not placed in trip within one hour (of initial discovery), then actions to prepare placing the reactor in MODE 3 should be initiated such that they are completed prior to expiration of the seven hour Completion Time. No preparations for placing the reactor in MODE 3 were initiated. While operator actions maintained the safety of the reactor (because the instruments were restored within the seven hours allowed for placing the reactor in MODE 3), operators did not recognize the significance of the initial alarm.

Cause:

Feedwater instrument 2FI-466 drifted out of calibration on April 8, 2003, apparently due to sensing line flashing. This caused actuation of the feedwater flow alarm. As a result, this instrument (which is required by TS Table 3.3.1-1, Item 14 - SG Water Level Coincident with Steam Flow/Feed Flow Mismatch) was rendered incapable of properly indicating feedwater flow. Therefore, the identified condition with 2FI-466 resulted in LCO 3.3.1 not being met. The Required Action for this Condition (LCO 3.3.1 Condition D) requires placing the channel in trip with a Completion Time of 1 hour – OR – placing the reactor in Mode 3 with a Completion Time of 7 hours.

Operators did not recognize this condition in a timely manner and thereby created a potential to violate the requirements of TS 3.3.1, RPS Instrumentation {JC}. This was likely due to operators' attention being focused on the activities associated with reactor criticality that were ongoing at the time. Factoring into the operators' decision making process, was that the feedwater and condensate systems {SD} were not in operation at the time. Operators perceived that, since the feedwater system was secured, the feedwater flow alarm did not warrant their immediate attention while they were preoccupied with reactor startup operations. However, they did not understand that the reactor was in a MODE of operation where this parameter was required by TS.

Corrective Actions:

Once operators discerned the significance of this condition, the affected channel was declared inoperable and LCO 3.3.1, Required Action A.1, was performed immediately, in accordance with the TS. This action consisted of entering Condition D, as referenced in Table 3.3.1-1 for the feedwater flow portion of function 14. The Required Action for Condition D was to place the channel in trip in 1 hour or be in MODE 3 in 7 hours.

The prompt investigation of this condition quickly identified that the instrument sensing line required filling. Plant technicians placed the channel in trip and refilled the instrument sensing line within one hour of the operators' recognition of this condition. Following completion of testing, feedwater indicator 2FI-466 was restored to operable status and LCO 3.3.1, Conditions A and D, were exited.

Corrective action to prevent recurrence includes continued monitoring of operators' responses to alarms via the Operations Job Observation Program. Such observations are evaluated for declining trends. Any performance declines would be addressed through the Point Beach corrective action process.

Component and System Description:

TS Table 3.3.1-1, Function 14, is Steam Generator Water Level – Low, Coincident With Steam Flow/Feedwater Flow Mismatch {JC}.

SG Water Level-Low, in conjunction with the Steam Flow/Feedwater Flow Mismatch, ensures that protection is provided against a loss of heat sink. In addition to a decreasing water level in the SG, the difference between feedwater flow and steam flow is evaluated to determine if feedwater flow is significantly less than steam flow.

With less feedwater flow than steam flow, SG level will decrease at a rate dependent upon the magnitude of the difference in flow rates. There are two SG level channels and two Steam Flow/Feedwater Flow Mismatch channels per SG. One narrow range level channel sensing a low level coincident with one Steam Flow/ Feedwater Flow Mismatch channel sensing flow mismatch (steam flow greater than feed flow) will actuate a reactor trip.

Table 3.3.1-1 identifies the Technical Specification Allowable Value for this trip function as not applicable (NA), because LCO 3.3.1, Function 13, Steam Generator Water Level-Low Low, is used to bound the analysis for a loss of feedwater event. The nominal setting required for the Steam Generator Water Level-Low trip function is 30% of span. This nominal setting was developed outside of the setpoint methodology and has been provided by the NSSS supplier.

The LCO requires two channels of SG Water Level-Low coincident with Steam Flow/Feedwater Flow Mismatch per SG.

In MODE 1 or 2, when the reactor requires a heat sink, the SG Water Level-Low coincident with Steam Flow/Feedwater Flow Mismatch trip must be OPERABLE. The normal source of water for the SGs is the MFW System (not safety related). The MFW System is only in operation in MODE 1 or 2. The auxiliary feedwater (AFW) System {BA} is the safety related backup source of water to ensure that the SGs remain the heat sink for the reactor. During normal startups and shutdowns, the AFW System provides feedwater to maintain SG level. In MODE 3, 4, 5, or 6, the SG Water Level-Low coincident with Steam Flow/Feedwater Flow Mismatch Function does not have to be OPERABLE because the MFW System is not in operation and the reactor is not operating or even critical. Decay heat removal is accomplished by the AFW System in MODE 3 and by the RHR System {BP} in MODE 4, 5, or 6. The MFW System is in operation only in MODE 1 or 2 and, therefore, this trip Function need only be OPERABLE in these MODES.

Safety Assessment:

During this period, the AFW system was in operation and providing feedwater to maintain SG level. Although the reactor had been transitioned from MODE 3 to MODE 2, neither the MFW system nor the main steam system had yet been placed in operation. Therefore, the 'SG Water Level-Low coincident with Steam Flow/Feedwater Flow Mismatch' trip function was superfluous during this sequence of events. As such, the safety significance of the flow indicator being inoperable during this period was minimal.

LCO 3.3.1, Condition D, provides an alternative action to placing the channel in trip within 1 hour. That

alternative action is to place the reactor in MODE 3, with a Completion Time of seven hours. Because feedwater instrument 2FI-466 was restored to operability at 0759, LCO 3.3.1 was met and Conditions A and D were exited. The seven hour Completion Time of LCO 3.3.1, Required Action D.2, had not yet expired. Therefore, the requirements of LCO 3.3.1 were complied with. A NRC memo from Christopher Grimes dated December 11, 1992, "Use of Shutdown Times for Corrective Maintenance (TIA 92-08)", states that the TS do not specify how shutdown times are to be used (i.e., the seven hours). A licensee may responsibly conclude that plant shutdown my be delayed as long as the shutdown times specified by the TS are observed. For the subject condition, operators had a high degree of confidence that the instrument would be restored to operable status prior to expiration of the seven hour Completion Time to be in MODE 3. These actions were appropriate since an unnecessary plant transient was thereby averted.

During the time that the feedwater flow channel fed by 2FI-466 was inoperable, the other flow channel to the "A" steam generator remained in service and capable of providing input to the reactor protection system for function 14 of TS Table 3.3.1-1. Accordingly, the safety and welfare of the public and the plant staff were not impacted by this event. At no time during this condition was there a complete loss of system, structure, or component related safety functions. Accordingly, we have also concluded that this event did not involve a safety system functional failure.

Similar Occurrences:

A review of LERs for the past three years identified no occurrences of failure to place instrument channels in trip as specified by Technical Specifications (TS).

The following LERs document failures to comply with TS LCOs.

LER	Date	Title
2001-004-00	01-Aug-01	Failure to Comply With LCO to Start Standby Emergency Power Supplies
2000-003-00	30-Nov-00	Failure to Comply With LCO Action Statement to Start Redundant EDGs