NMC
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Nuclear Management Company, LLC
Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, WI 54241

NRC 2002-0105

November 22, 2002

Document Control Desk
U.S. NUCLEAR REGULATORY COMMISSION
Mail Station P1-137
Washington, D.C. 20555

10 CFR 50.73

Ladies/Gentlemen:

Docket Number 50-266
Point Beach Nuclear Plant, Unit 1
Licensee Event Report 266/2002-002-00
Unit 1 A-Train Reactor Protection Cable Routed in B-Train Cable Trays

Enclosed is Licensee Event Report 266/2002-002-00 for the Point Beach Nuclear Plant, Unit 1. This LER is submitted to document the discovery that an A-Train safety injection signal cable was routed in B-Train cable trays. This cable routing non-conformance resulted in a condition prohibited by the Technical Specifications and was determined to be reportable in accordance with 10 CFR 50.73(a)(2)(i)(B). This condition has been corrected.

There are no new commitments in this report.

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

Sincerely,

A. J. Cayia
Site Vice President

Enclosure

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

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TITLE (4)
Unit 1 A-Train Reactor Protection Cable Routed in B-Train Cable Trays

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
09	25	2002	2002	- 002	- 00	11	22	2002	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	6
POWER LEVEL (10)	000

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)	OTHER
20.2203(a)(2)(iii)		50 46(a)(3)(ii)		50 73(a)(2)(v)(C)	Specify in Abstract below or in NRC Form 366A
20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)		50.73(a)(2)(v)(D)	
20.2203(a)(2)(v)	X	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).	NO				

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

While completing a plant modification for rerouting of cables, NMC personnel identified an A-Train engineered safeguards features (ESF) actuation circuit installed in a B-Train cable tray. This circuit provides an A-Train SI actuation signal to the A-Train reactor protection system. The A-Train SI actuation signal is also routed to the B-Train reactor protection through a separate cable. This routing discrepancy has existed since original plant construction. This condition is being reported as a condition prohibited by the Technical Specifications.

The other two Unit 1 cables associated with this unique cable scheme were routed correctly. The cable routing for Unit 2 was verified correct during the unit's Spring 2002 refueling outage. This cable routing discrepancy was corrected as part of the ongoing modification and completed during the Unit 1 Fall 2002 refueling and maintenance outage. A safety assessment concluded that this cable separation violation had no impact on the public health and safety and did not involve a safety system functional failure.

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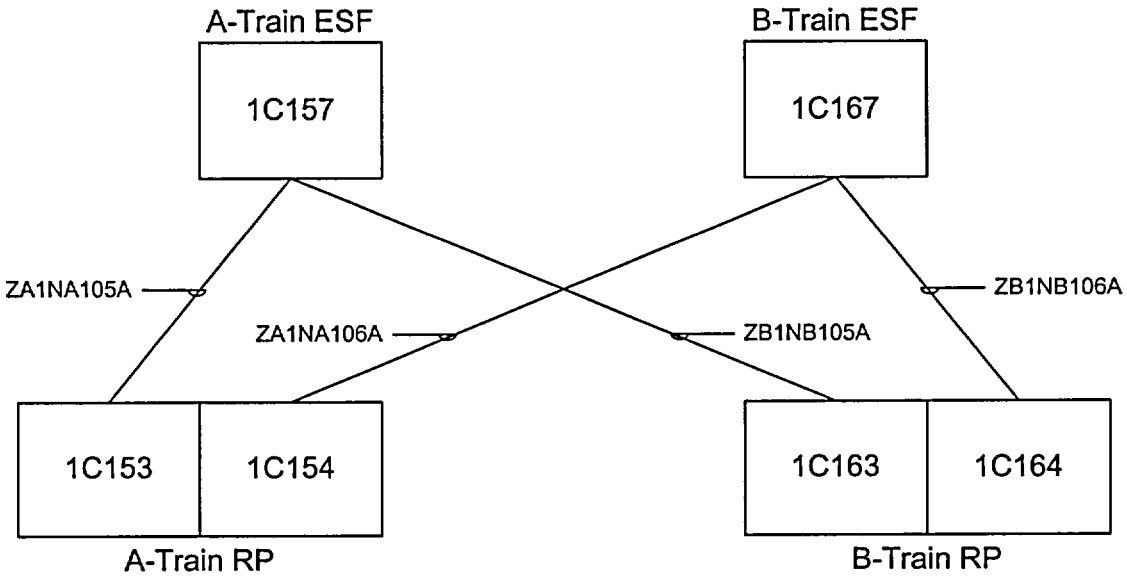
TEXT *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

Event Description:

On September 25, 2002 during the performance of a plant modification (MR 00-003), NMC personnel discovered that a Point Beach Nuclear Plant (PBNP) Unit 1 A-Train reactor protection {JC} cable {CBL1} was routed in B-Train cable trays {TY}. At the time of discovery, PBNP Unit 1 was in Mode 6 for its 27th refueling outage. Modification MR 00-003 was being performed to correct previously identified reactor protection cable train separation concerns in the conduits {CND} and cable trays above engineered safety features (ESF) {JE} cabinets {CAB} 1C157 and 1C167. These cabinets and trays are located in the cable spreading room {NA}. While pulling cables out of 1C157, to reroute reactor protection (RP) cable ZB1NB105A, a B-Train cable, cable ZA1NA105A, an A-train cable, was found in the same conduit (DM-1). This is a Train B conduit. Cables ZB1NB105A and ZA1NA105A are part of the unique four-cable scheme associated with a safety injection (SI) signal. Actuation of one train of ESF will cause a reactor trip signal on both trains. The complete scheme is shown below. Cable ZA1NA105A was designed to be routed between A-train cabinets in A-Train cable trays. However, finding that cable in conduit DM-1 indicates that it is routed in B-train cable trays, which is not in accordance with PNBP design requirements.



Upon discovery of this routing discrepancy, a Corrective Action Program activity request was initiated (CAP 29532) to document the condition. The A-Train SI signal to the reactor protection system was declared inoperable due to improper cable separation. This condition affects Item 16 of Technical Specification Table 3.3.1, "Safety Injection Input from Engineered Safety Features Actuation System." That item is applicable only in Modes 1 and 2 and requires 2 trains to be operable. If a train is inoperable for greater than 18 hours, the reactor is required to be in Mode 3. PBNP Unit 1 was in Mode 6 at the time of this discovery; therefore, the action condition for this item was not applicable at the time of discovery. However, PBNP Unit 1 had operated in Modes 1 and 2 in the past with this existing train separation discrepancy. Therefore, in accordance with the requirements of 10 CFR 50.73(a)(2)(i)(B), PBNP Unit 1 had operated in a condition which was prohibited by the plant's Technical Specifications. As clarified in NUREG 1022, this LER is required even if the condition was not discovered until after the allowable time had elapsed and the condition was rectified immediately upon discovery.

Cause:

Both the plant's Cable and Raceway Data System (CARDS) and the original Architect Engineer cable data sheets were reviewed for cable ZA1NA105A. Cable ZA1NA105A was listed as having the same routing as cable ZA1NA106A. Cables ZA1NA105A and ZA1NA106A cannot have the same routing since cable ZA1NA105A is routed to 1C157 and cable ZA1NA106A is routed to 1C167. This discrepancy had been noted in a 1998 condition report (CR 98-3944/ CAP020254). The conclusion drawn in the resolution of that condition report was that the ZA1NA105A cable must be routed in A-train cable trays to 1C157 since the cable is physically located in the cabinet. However, the other end of the cable was not verified to check which cable tray/conduit cable ZA1NA105A was routed in when it left cabinet 1C153. Based on a review of plant modification and work order history, the routing of cable ZA1NA105A had not previously been modified from original construction. Therefore we have concluded the apparent cause of this discrepancy results from an original construction installation error.

Corrective Actions:

An extent of condition assessment has been completed. As described in the "Component and System Description" below, the four cables in this SI to reactor trip scheme are unique to the plant. The other two Unit 1 cables associated with this unique cable scheme have been visually verified as being routed correctly or were being rerouted in accordance with the plant modification. PBNP Unit 2 also has the same four-cable scheme. The cables from this scheme (ZC2NA105A, ZC2NA106A, ZD2NB105A and ZD2NB106A) were checked and verified to be appropriately routed following the completion of a separate modification (MR 00-004) during the Unit 2 2002 refueling outage.

An engineering change request (ECR) to MR 00-003 was initiated to correct the separation violation documented in this report. The ECR abandoned the existing cable and relabeled it as ABN0006. A new cable ZA1NA105A has been installed in dedicated A-train cable trays between 1C153 and 1C157.

Component and System Description:

The engineered safety features actuation system detects plant conditions that require automatic ESF equipment operation, and actuates the appropriate ESF equipment when preset limits are reached. ESFAS subsystems monitor plant parameters indicative of different accidents. When the minimum number of channels of a monitored variable reaches a preset limit, trip bistables satisfy coincidence logic for an individual subsystem and the subsystem is automatically initiated. ESFAS subsystems include SI actuation. Among other things, a manual or automatic SI signal initiates a reactor trip through the reactor protection system. The SI actuation contacts that supply a signal to the reactor trip logic originate in each of the two ESFAS logic trains. Each ESFAS logic train supplies a reactor trip signal to both trains of reactor protection logic. This leads to a unique condition where the ESFAS logic A-Train is communicating with the RPS logic B-Train (as well as with the A -Train), and the ESFAS B -Train is communicating with the RPS A-Train (as well as with the B-Train). This condition does not create an electrical separation conflict between redundant trains because the inputs to reactor protection are channel-related. Within each train of reactor protection, the two inputs from SI actuation train A & B enter two separate channel-related racks. There, the inputs drive separately fused isolation relays. Additional information can be found in Section 7.3 of the PBNP FSAR..

Safety Assessment:

The cables and cabinets addressed by this LER are all located in the cable spreading room (CSR), which is a vital protected area in the Point Beach Plant. The train separation violation identified in the event description would not by itself make the SI actuation signal input to the reactor protection inoperable. However, a initiating event such as a fire

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could have effected both the A-Train and B-Train which were found installed in the B-Train cable trays. The CSR is protected from significant fire events by both heat and smoke detectors and an automatic Halon fire suppression system. Thus the potential for an uncontrolled fire in the CSR is minimized. In addition, in accordance with 10 CFR 50 Appendix R safe shutdown requirements, the plant can be safely shutdown and maintained in a safe shutdown condition without the availability of the CSR equipment.

Notwithstanding these fire protection provisions, if a fire had initiated in the B-Train cable trays, it is probable that the circuits would have failed to an open circuit or could have short circuited. In the former case, the function of the ESF to RP would have been satisfied since this circuit scheme is designed as a "de-energize to trip" circuit and an open circuit would result in a reactor trip signal. If a hot smart short occurred in the cable tray and the circuit remained energized, it is likely that the B-train ESF signal cable to the A-Train RP would remain unaffected by the initiating fire and capable of completing the ESF to RP trip function.

Based on these considerations we have concluded that the health and safety of the public and plant staff was not impacted by the event. Since we have not identified any loss of safety function that resulted from this lack of adequate ESF to RP train separation, we have also concluded that this event did not involve a safety system functional failure.

Similar Occurrences:

A review of LERs submitted in the past three years identified no other events involving cross train separation events. An older LER dated September 7, 1996 was identified which discussed main control board circuit separation.

LER NUMBER	Title
LER 266/96-007-00	Redundant Safety Related Circuits in Same Main Control Board Wireways