Commonwealth Edison Company
Byron Generating Station
4450 North German Church Road
Byron, IL 61010-9794
Tel 815-234-5441

ComEd

May 5, 1998

LTR: BYRON 98-0144
FILE: 3.03.0800 (1.10.0101)

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

Dear Sir:

The Enclosed Licensee Event Report from Byron Generating Station is being transmitted to you in accordance with the requirements of 10CFR50.73(a)(2)(i)(B).

This report is number 98-011; Docket No. 50-454.

Sincerely,

K. L. Kofron
Station Manager
Byron Nuclear Power Station

KLK/MS/js

Enclosure: Licensee Event Report No. 98-011

cc: A. B. Beach, NRC Region III Administrator
NRC Senior Resident Inspector
INPO Record Center
ComEd Distribution List

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NRC FORM 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 04/30/98

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
BYRON NUCLEAR POWER STATION, UNIT 1	05000454	1 OF 4

TITLE (4)

Integral Attachment Welds not Inspected in Accordance with ASME Code due to Deficient ISI Program Plan

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
04	09	98	98	-- 011 --	00	05	05	98	FACILITY NAME	DOCKET NUMBER
										05000

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
POWER LEVEL (10)	100		20.2201(b)		20.2203(a)(2)(v)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)
			20.2203(a)(1)		20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)
			20.2203(a)(2)(i)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71
			20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(iv)		OTHER
			20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A
			20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Gary Contrady, Programs Lead David Young, Root Cause Analyst	815-234-5441 X2496 815-234-5441 X3064

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

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)

A corporate assessment identified that the ISI/NDE Program Plan was deficient in that an insufficient number of Unit 1 Class 2 piping integral attachment welds were examined during the 1st interval which ended September 1, 1996. Contrary to ASME Section XI specification, the ISI Program Plan was arranged such that only one of each type of integral attachment on each loop was examined during the 1st interval. This selection basis is consistent with other Class 2 categories but has been determined to be incorrect. This inadequate component selection is limited to the Feedwater (SJ) [FW] and Main Steam (SB) [MS] systems on Unit 1.

The NDE inspection scope for Unit 2 has been augmented and the inspections have been completed to ensure that the code requirements are met within Unit 2's 1st 10 year interval. The NUREG 1022 cause code of best fit is 'D' in that the ISI Program Plan was deficient in its selection of inspection locations. However, the root cause of the event is unknown, therefore there are no additional corrective actions to prevent recurrence.

The safety of the plant and the public was not affected or challenged by this event. All systems functioned as required and there were no unusual or misunderstood conditions associated with the discovery. This event is reportable under 10 CFR 50.73(a)(2)(i)(B).

A. PLANT CONDITIONS PRIOR TO EVENT:

Event Date/Time 04-09-98 / 0800

Unit 1 Mode 1 - Power Operation Rx Power 100% RCS [AB] Temperature/Pressure NOT/NOP

B. DESCRIPTION OF EVENT:

There were no structures, systems or components inoperable prior to the event which contributed to the event.

As recorded on Problem Identification Form (PIF) B1998-01601 (April 9, 1998) "Insufficient Selection of Class 1 and 2 Integral Attachment Welds," and Corporate Assessment NOD-CA-98-012-YP (issued April 16, 1998) "ISI Program Assessment Byron Units 1 and 2," and further confirmed through document review and personnel interviews, the following sequence of events occurred:

A corporate assessment was performed on the Byron Station Inservice Inspection (ISI) Program from March 17 through March 24, 1998. The objective was to assess both the first and second interval ISI programs utilizing a methodology similar to the NRC Inspection Manual for ISI activities and defined specific tasks. Byron Site Engineering surveyed several utilities to determine the industry practice on the selection criteria of these components. The survey corroborated the Corporate Assessment Finding. Site Engineering contacted Regulatory Assurance for a reportability affirmation related to Unit 1, which was beyond the 1st ISI interval. It was determined on April 9, 1998 that the event is reportable per Byron Reportability Manual SAF 1.15 (Operation outside of Technical Specification).

The corporate assessment identified a finding regarding the ISI/NDE Program Plan in that an insufficient number of Unit 1 Class 2 piping integral attachment welds were examined during the 1st interval which ended September 1, 1996. These welds are classified as Category C-C, Item Number C3.20. ASME Section XI, 1983 w/ Summer 1983 Addenda requires those integral attachments on piping components that were selected for examination under the piping category be examined. Contrary to this code specification, the ISI Program Plan was arranged such that only one of each type of integral attachment on each loop was examined during the 1st interval. This inadequate component selection is limited to the Feedwater (SJ) [FW] and Main Steam (SB) [MS] systems. Other Class 2 systems, which possess these types of components, are governed by ASME XI 1974 w/ Summer 1975 Addenda which applies sample type selection criteria.

This issue is applicable to the 1st ISI 10-year interval for Byron Units 1 and 2. It is applicable to the 1st interval only, because ASME Code Case N-509 has been approved via relief request I2R-17, for the 2nd interval on both Units. The Relief Request allows for a sample population of integral attachments to be utilized per the code case, augmented by a minimum sample requirement of 10%. Byron Unit 1 is presently in the 2nd cycle (1st period) of the 2nd ISI interval. Byron Unit 2 is presently in the last cycle of the 1st ISI interval. The Unit 2 1st interval examination schedule/scope has been augmented such that the requirements will be met within the 1st interval.

This event is reportable under 10 CFR 50.73(a)(2)(i)(B) based on a deviation from Technical Specifications 4.0.5.

C. CAUSE OF EVENT:

The original selection of Class 2 integral attachments was prepared consistent with general Class 2 sampling criteria which is generally a percentage of the total population. The unique requirements that the ASME code applies to integral attachments alone (defined in the notes of the selection tables for ASME Class 2 Category C-C and Category C-F) were apparently not recognized by the originators and reviewers of the initial ISI Program Plan (1984), and not recognized until the March 1998 corporate assessment. The originators and reviewers directly involved in the development of the plan are unavailable to interview and records are inconclusive, therefore, the root cause is indeterminate.

Document reviews, Event and Causal Factor Charting, and Personnel Interviews were conducted during this investigation.

D. SAFETY ANALYSIS:

The safety of the plant and the public was not affected or challenged by this event. All systems functioned as required and there were no unusual or misunderstood conditions associated with the discovery.

Byron Unit 1 is in the 2nd ISI interval, therefore the examinations for the 1st interval cannot be satisfied. There are no operability concerns for the Mainsteam and Feedwater systems. The 2nd interval relief request I2R-17, "Alternate Rules for the Selection and Examination of Class 1, 2, and 3 Integrally Welded Attachments," approved for Byron, allows a sample population that will not be less than 10%. The sample chosen by Byron is actually 15%. The actual sample of the eligible population examined in the 1st interval was 57% (much greater than the 15% approved for the 2nd interval).

There is assurance that the operability of the systems was not adversely affected based on the sample inspected and the following information. ASME Code Case N-509 has been issued by the code committees, recognizing that examining sample populations, augmented with a 10% minimum, provides an acceptable level of quality and safety. No inservice flaws which would affect safety or compromise the integrity of the plant were discovered during 1st interval inspections at either Byron or Braidwood. The Safety Evaluation Report (SER) for Byron Relief Request I2R-17 acknowledged that failures of integral attachments in the commercial industry are rare and not typically detected during Inservice Inspection examinations, but during other investigations dealing with supports damaged during operations. The NRC SER for Byron relief request I2R-17 states that most code examination requirements are based on sampling to ensure the detection of service induced degradation, so extending the sampling philosophy to the integral attachment welds provides an equivalent level of quality and safety. No further action regarding examinations is recommended against the 1st interval Program Plan since the sample of inspections (57%) provides adequate assurance that the integrity of the systems was not compromised.

E. CORRECTIVE ACTIONS:

Immediate Action:

The Byron Site Engineering and Operation Departments evaluated operability issues with System Engineering and Regulatory Assurance. It was concluded that the operability of the systems was not adversely affected.

E. CORRECTIVE ACTIONS (cont.)

Corrective Action:

Regarding Unit 2, B2R07 is the final refueling outage of the 1st ISI interval. The MDE inspection scope has been augmented to ensure the requirements of the code are satisfied as written. This action was verified completed on May 4, 1998. This action will prevent a similar event for Unit 2.

Corrective Actions to Prevent Recurrence:

The NUREG 1022 cause code of best fit is 'D' in that the ISI Program Plan was deficient in its selection of inspection locations. However, the root cause of the event is unknown, therefore there are no additional corrective actions to prevent recurrence. A supplemental report will not be issued, as no value would be realized from any further investigation into the circumstances which contributed to or caused the oversight in the initial ISI Program Plan (1984). The Byron ISI Program Plan for the 2nd 10 year ISI interval for both Units 1 and 2 contains an inspection schedule for Integral Attachments.

F. RECURRING EVENTS SEARCH AND ANALYSIS:

Data base searches were performed for previous similar events (LER's). The Institute of Nuclear Power Operations (INPO) LER data base was searched. No similar Byron Station LER's were identified, however, ComEd's Zion Station had a similar LER in 1996, in that it involved the same code category and item number. The Zion LER deals with the extent of coverage obtained by the examination. The Zion issue does not pertain to Byron. The Byron issue is the number of components selected for examination. The Byron issue is therefore not a recurrence of the Zion issue, and knowledge of the Zion issue would not have been expected to have prevented this issue at Byron.

On January 22, 1996, Zion Station confirmed that a documentation deficiency existed for the second interval Inservice Inspection program. ASME Section XI, 1989 Edition, Table IWC-2500-1, Item C3.20, (the inspection category for Integrally Welded Attachments to Piping) stated that the extent of examination was to include 100% of required areas of each welded attachment, limited to attachments to those components required to be examined under Examination Categories C-F and C-G. It was identified that certain inspections associated with this category were not 100% inspected due to inspection interferences unlike the Byron issue. The root cause of the event was unknown.

G. COMPONENT FAILURE DATA:

None.