

LICENSEE EVENT REPORT (LER)

Facility Name (1) QUAD-CITIES, NUCLEAR POWER STATION, UNIT One Docket Number (2) 0 5 0 0 0 2 5 4 Page (3) 1 of 0 3

Title (4) Alternate Rod Insertion System Initiated Causing a Reactor Scram Due To Procedural Deficiencies While Draining The Reactor Vessel

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 Names	Docket Number(s)
01	19	86	86	004	00	02	13	86		05000

OPERATING MODE (9) 3

POWER LEVEL (10) 0 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> Other (Specify in Abstract below and in Text)
<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	
<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

Name Erich Weinfurter - Technical Staff Engineers ext. 2174 TELEPHONE NUMBER 3 0 9 6 5 4 - 2 2 4 1

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
0									

SUPPLEMENTAL REPORT EXPECTED (14)

Yes (If yes, complete EXPECTED SUBMISSION DATE) NO

Expected Submission Date (15) _____

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

On January 19, 1986, during refueling operations, the Anticipated Transient Without Scram (ATWS)/Alternate Rod Insertion (ARI) System [JC] was initiated at 0203 hours on a Low-Low Reactor Water Level signal. As a result of this initiation a Reactor Scram occurred at 0205 hours. The reactor had been defueled and was being drained for decontamination activities at the time. The cause of the inadvertent actuation was due to a deficiency in the procedure being used to drain the vessel. The procedure failed to address the ATWS/ARI low reactor water level trip. Corrective action is to revise the procedure.

This report is being submitted to you in accordance with the requirements of 10 CFR 50.73(a)(2)(iv), which requires reporting of any event or condition that resulted in actuation of any Engineered Safety Feature.

B602210107 B60213
PDR ADOCK 05000254
S PDR

FEZZ
11

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						Page (3)		
		Year	///	Sequential Number	///	Revision Number				
Quad Cities Unit One	0 5 0 0 0 2 5 4	8 6	-	0 0 4	-	0 0	0 2	OF	0 3	
TEXT										

PLANT AND SYSTEM IDENTIFICATION:

General Electric - Boiling Water Reactor - 2511 Mwt rated core thermal power. Energy Industry Identification System (EIIS) codes are identified in the text as [XX].

IDENTIFICATION OF OCCURRENCE:

Anticipated Transient Without Scram/Alternate Rod Insertion System actuate on reactor low water level due to a procedure deficiency of not taking the system out-of-service while draining the vessel.

Discovery Date: January 19, 1986

Report Date: February 13, 1986

This report was initiated by Deviation Report D-4-1-86-11

CONDITIONS PRIOR TO OCCURRENCE:

STARTUP/HOT STANDBY Mode(3) - Rx Power 0% - Unit Load 0 MWe

STARTUP/HOT STANDBY Mode(3) - In this position, the reactor protection scram trips, initiated by condenser low vacuum and main steamline isolation valve closure are bypassed, the low pressure main steamline isolation valve closure trip is bypassed and the reactor protection system is energized, with IRM and APRM neutron monitoring system trips and control rod withdrawal interlocks in service.

DESCRIPTION OF OCCURRENCE:

On January 19, 1986, during normal refueling operations, the Anticipated Transient Without Scram (ATWS)/Alternate Rod Insertion (ARI) System [JC] was initiated on a Low-Low Reactor Water Level signal. All fuel had been moved to the spent fuel storage pool, and the reactor cavity/vessel was being drained to facilitate decontamination of the recirculation system piping. The mode switch was in the START-UP/HOT STANDBY mode to allow control rod withdrawal and unlatching of control blades. At 0115 hours, Operations started to transfer water from the Reactor Vessel to the Main Condenser. This transfer was being performed under Temporary Procedure, number 3845. At 0204 hours the Alternate Rod Insertion system received a Low-Low Reactor Water Level signal, energizing six solenoid valves which blocked flow from the Control Rod Drive System [AA] main air supply header and bled off the air in the scram valve pilot air header. This caused the scram pilot valves to start to open, allowing over-piston water from the control rod drives to enter the Scram Discharge Volume (SDV). At 0205 hours a Reactor Scram occurred when the Reactor Protection System [JC] received a trip signal on SDV Hi Water Level. The mode switch was moved to SHUTDOWN at 0219 hours in an attempt to reset the scram signal. This proved unsuccessful, so at 0236 hours the fuses to the ATWS/ARI system were removed, de-energizing the six solenoid valves. With the valves reset to a normal condition, the air header was pressurized, and the scram pilot valves closed allowing the Scram to be reset. The transfer of water to the main condenser was terminated at 0313 hours. The ATWS/ARI system functioned as designed by bleeding off the air header. However the system has a 30 second delay timer which is intended to automatically reset the ARI valves. This did not occur requiring the fuses to be pulled in order to reset the Scram. This report is submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(iv), which requires reporting of any event or condition that resulted in actuation of any Engineered Safety Feature.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			Page (3)		
		Year	Sequential Number	Revision Number			
Quad Cities Unit One	0 5 0 0 0 2 5 4	8 6	- 0 0 4	- 0 0	0 3	OF	0 3
TEXT							

APPARENT CAUSE OF OCCURRENCE:

The root cause of this event was a procedure deficiency in the Temporary Procedure used to transfer the water from the reactor vessel. The procedure failed to address the ATWS/ARI system, and take it out-of-service to prevent actuation. The temporary procedure had been generated because of missing prerequisites in the parent procedure, QOP 1000-14, "Pumping Water From the Reactor Vessel and Cavity to the Condenser or to the Condensate Pumps using RHR Pumps". The missing prerequisites were taken from QOP 201-1, "Draining the Reactor Vessel and Recirculation Loops". In neither procedure was the ATWS/ARI system mentioned, hence two deficient procedures produced a deficient temporary procedure. When the modification to install ATWS/ARI was completed there was failure to include an out-of-service requirement in QOP 201-1, since this procedure has the intent of lowering the water level below the actuation point. There was also less than adequate review of the Temporary Procedure which should have noted that this procedure was to be used to lower the water level below the Low-Low Reactor Water Level trip setpoint and had not addressed the ATWS/ARI system.

ANALYSIS OF OCCURRENCE:

Since there was no irradiated fuel in the vessel there were no potential safety consequences. The intent of the procedure is to lower the water level below the point where all safety systems would normally initiate. For this reason the safety systems were either taken out of service or the related instrumentation was valved out and failed upscale. This is a case of a failure to remove a system from service to prevent it from operating inadvertently. A problem with the timing relay in the ATWS/ARI system, which prevented the system from resetting was identified, but does not present a safety concern. The ATWS/ARI system did initiate as designed and would have inserted all operable control rods by bleeding down the scram pilot valve air header.

CORRECTIVE ACTION:

Immediate corrective action was taken in removal of the ATWS/ARI fuses to permit the scram to be reset. Further action will be taken to include an out-of-service prerequisite to QOP 201-1, by valving out the solenoid valves and/or removal of fuses to prevent the valves from energizing. The Management personnel involved in the review of temporary procedures have been made aware of this event. A Work Request was written to repair the ARI delay timer.

FAILURE DATA:

None

EVENT SUMMARY AND CAUSE CODES

REV, 0 12/85
PGK

D-4-1-86-11

<input type="checkbox"/> Lost generation	<input type="checkbox"/> Reactor trip	<input type="checkbox"/> NRC violation, level___
<input type="checkbox"/> Cost > \$25,000	<input checked="" type="checkbox"/> ESF actuation	<input type="checkbox"/> GSEP event, class_____
<input type="checkbox"/> Hazard or Spill	<input type="checkbox"/> NRC reportable	<input type="checkbox"/> Tech Spec LCO
<input type="checkbox"/> Personnel injury	<input checked="" type="checkbox"/> LER	<input type="checkbox"/> Potential or future loss
Component type	Failure mode	SALP functional area___

	Component type	Failure mode	Department			
X						
X						
X						

	Licensed? L or blank	Type	Level	Department	Detail code	
A						
A						
A						

	Type	Detail code	Department			
B						
B						
B						

	Type	Detail code			
C					

	Type of deficiency	Detail code	Procedure type		
D	T 2	OP	PROCEDURE DEFICIENT, TEMPORARY CHANGE LESS THAN ADEQUATE, REVIEW LESS THAN ADEQUATE		
D	I 2	OP	PROCEDURE DEFICIENT INCOMPLETE, MISSING, CAUTION WARNINGS, (PRE-REQUISITE)		
D					

	Type	Licensed? Level	Department			
E						
E						
E						



Commonwealth Edison

Quad Cities Nuclear Power Station
22710 206 Avenue North
Cordova, Illinois 61242
Telephone 309/654-2241

NJK-86-43

February 13, 1986

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

Reference: Quad-Cities Nuclear Power Station
Docket Number 50-254, DPR-29, Unit One

Enclosed please find Licensee Event Report (LER) 86-04, Revision 00, for Quad-Cities Nuclear Power Station.

This report is submitted to you in accordance with the requirements of the Code of Federal Regulations, Title 10, Part(s) 50.73(a)(2)(iv), which requires reporting of any event or condition that resulted in actuation of any Engineered Safety Feature.

Respectfully,

COMMONWEALTH EDISON COMPANY
QUAD-CITIES NUCLEAR POWER STATION

N. J. Kalivianakis
Station Manager

NJK/MSK/dak

Enclosure

cc: J. Wojnarowski
A. Madison
INPO Records Center
NRC Region III

0405H

IE22
/1