Commonwealth Edison Company
Quad Cities Generating Station
22710 206th Avenue North
Cordova, IL 61242-9740

November 27, 2000

SVP-00-181

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

Quad Cities Generating Station, Units 1 and 2
Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

Subject: Licensee Event Report Concerning Safe Shutdown Makeup Pump Inoperable Due to Electrolytic Capacitor Failure

Enclosed is Licensee Event Report (LER) 254/00-007, Revision 00, "Safe Shutdown Makeup Pump Inoperable Due to Electrolytic Capacitor Failure," for Quad Cities Nuclear Power Station.

This report is submitted in accordance with the requirements of the Code of Federal Regulations, Title 10, Part 50.73(a)(2)(v)(A), which requires reporting of any event or condition that could have prevented a Reactor shutdown and maintenance of safe shutdown.

We are committing to the following actions:

Controls will be created to ensure periodic replacement of electrolytic capacitors in the Safe Shutdown Makeup Pump controllers.

Controls will be evaluated addressing periodic maintenance for high-risk mitigating and event-initiating systems with components susceptible to age-sensitive capacitor failure.

Any other actions described in the submittal represent intended or planned actions by Commonwealth Edison (ComEd) Company. They are described for the NRC's information and are not regulatory commitments.

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Should you have any questions concerning this letter, please contact Mr. C.C. Peterson at (309) 654-2241, extension 3609.

Respectfully,

Joel P. Dimmette, Jr.
Site Vice President
Quad Cities Generating Station

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Quad Cities Generating Station

NRC FORM 366 (6-1998) U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

APPROVED BY OMB NO. 3150-0104
EXPIRES 06/30/2001

Estimated burden per response to comply with this mandatory information collection request: 50 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. If an 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.

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Quad Cities Nuclear Power Station, Unit 1	05000254	1 of 3

TITLE (4)
Safe Shutdown Makeup Pump Inoperable Due to Electrolytic Capacitor Failure

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
10	26	2000	2000	007	00	11	27	2000	Quad Cities Nuclear Power Station	05000265
									FACILITY NAME: N/A	DOCKET NUMBER: 05000

OPERATING MODE (9)	5
POWER LEVEL (10)	000

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

	20.2201(b)		20.2203(a)(2)(v)		50.73(a)(2)(i)		50.73(a)(2)(viii)
	20.2203(a)(i)		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)	X	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)
Charles Peterson, Regulatory Assurance Manager	(309) 654-2241 ext 3609

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
X		CAP		Y						

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)

At approximately 1415 hours on October 26, 2000, with Unit 1 in refueling mode and Unit 2 in power operation, the Safe Shutdown Makeup Pump (SSMP) tripped unexpectedly during quarterly operability testing. The SSMP was declared inoperable and an electrolytic capacitor in the flow indicating controller was identified as failed and was replaced.

The failure of the electrolytic capacitor was age-related. The root cause of this failure was implementation of the Performance Centered Maintenance (PCM) program such that the degradation in the electrolytic capacitor was not identified prior to the failure.

Unit 1 was in the refuel mode when the failure was identified, and operation of the SSMP system was available from the Control Room for both Units. Therefore, the safety significance of this event was minimal.

Corrective actions include the establishment of controls to ensure periodic replacement of electrolytic capacitors in the SSMP controllers and in high-risk mitigating and event-initiating systems with components susceptible to age-sensitive capacitor failure.

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] and are obtained from IEEE Standard 805-1984, IEEE Recommended Practice for System Identification in Nuclear Power Plants and Related Facilities.

EVENT IDENTIFICATION:

Safe Shutdown Makeup Pump Inoperable Due to Electrolytic Capacitor Failure

A. PLANT CONDITIONS PRIOR TO EVENT:

Unit: 1	Event Date: October 26, 2000	Event Time: 1415 hours
Reactor Mode: 5	Mode Name: Refueling	Power Level: 000

Reactor Coolant System Pressure: 000 psig
Reactor Coolant System Temperature: 100 degrees F.

Refueling (5) - Mode switch in the Shutdown or Refueling position with average reactor coolant temperature ≤ 140 degrees F and fuel in the reactor vessel with one or more vessel head closure bolts less than fully tensioned or with the head removed.

Unit: 2	Event Date: October 26, 2000	Event Time: 1415 hours
Reactor Mode: 1	Mode Name: Power Operation	Power Level: 90%

Power Operation (1) - Mode switch in the RUN position with average reactor coolant temperature at any temperature.

B. DESCRIPTION OF EVENT:

At approximately 1415 hours on October 26, 2000, the Safe Shutdown Makeup Pump (SSMP) [P] tripped unexpectedly during quarterly operability testing. The SSMP provides cooling water to the Unit 1 or Unit 2 reactor core in the event that the reactor becomes isolated from the main condenser simultaneously with a loss of the feedwater system. At the time of the trip, the in-plant operator was transferring the flow controller [TC] to automatic from the manual position. At 1525 hours, during a second attempt with the System Engineer present, the pump again tripped under the same circumstances. The SSMP was run a third time, this time using the flow controller in manual without transferring to automatic. On this attempt, the SSMP obtained the proper pressure and flow but the local controller indications remained erratic. The SSMP was declared inoperable from the time of the first trip. The SSMP was considered available for PRA and SSD requirements since the proper flows and pressures were achievable.

Troubleshooting was initiated. A loop calibration revealed an erratic output of the Flow Indicating Controller (FIC) [FIC]. Further testing exposed the failure of electrolytic capacitor C23 [CAP]. The faulted capacitor was replaced, and the FIC was tested successfully.

The FIC was returned to service and the surveillance was successfully completed. The SSMP was declared operable at 2035 hours on October 27, 2000.

This event is being reported pursuant to 10 CFR 50.73(a)(2)(v)(A) – any event or condition that could have prevented a reactor shutdown and maintenance of safe shutdown.

C. CAUSE OF EVENT:

The failure of the electrolytic capacitor was age-related. The root cause of this failure was a previous decision to exclude electrolytic capacitors in flow controllers from the Performance Centered Maintenance (PCM) program such that the degradation in the electrolytic capacitor was not identified prior to the failure.

D. SAFETY ANALYSIS

Because Unit 1 was in the refuel mode when the failure of FIC 2-2941-6 was identified, there was no immediate safety significance for Unit 1. Operation of the system was available from the Control Room for both Units. Therefore, the safety significance of this event was minimal.

E. CORRECTIVE ACTIONS:

Corrective Action Completed:

The electrolytic capacitor was replaced and the Safe Shutdown Makeup Pump was successfully tested.

Corrective Actions to be Completed:

Controls will be created to ensure periodic replacement of electrolytic capacitors in the SSMP controllers.

Controls will be evaluated addressing periodic maintenance for high-risk mitigating and event-initiating systems with components susceptible to age-sensitive capacitor failure.

F. PREVIOUS OCCURRENCES:

The faulted FIC 0-2941-6 experienced an identical failure in 1988. The SSMP system had been in service for approximately four years at the time of the 1988 failure. Trouble shooting identified a failed electrolytic capacitor. The capacitor was replaced and the SSMP system was returned to service.

G. COMPONENT FAILURE DATA:

The failed capacitor is a 500 micro F electrolytic capacitor manufactured by Sprague Atom.