Power Reactor Event # 46955

Site: OCONEE **Notification Date / Time:** 06/13/2011 16:04 (EDT)
Unit: 1 2 3 **Region:** 2 **State :** SC **Event Date / Time:** 06/07/2011 11:52 (EDT)
Reactor Type: [1] B&W-L-LP,[2] B&W-L-LP,[3] B&W-L-LP **Last Modification:** 06/13/2011
Containment Type: DRY AMB DRY AMB DRY AMB

NRC Notified by: SANDRA SEVERANCE **Notifications:** MIKE ERNSTES R2DO
HQ Ops Officer: MARK ABRAMOVITZ PART 21 GROUP
Emergency Class: NON EMERGENCY
10 CFR Section:
21.21 UNSPECIFIED PARAGRAPH

Unit	Scram Code	RX Crit	Init Power	Initial RX Mode	Curr Power	Current RX Mode
1	N	No	0	Refueling	100	Power Operation
2	N	Yes	100	Power Operation	100	Power Operation
3	N	Yes	100	Power Operation	100	Power Operation

NONCONSERVATIVE VALVE ACTUATOR PROGRAM SOFTWARE

"In Kalsi Engineering Valve and Actuator Program (KVAP) Error Report 2011-02, Kalsi Engineering identified an error in the KVAP software that provides default flow and torque coefficients for ball and plug valves which can affect margin predictions. Communication between Kalsi and Duke Energy personnel confirmed that non-conservative torque values were calculated for select ball valves used at Oconee for containment isolation. As a result of the Kalsi error, the non-conservatively calculated torque values resulted in negative actuator margins, calling into question the actuators' capability to close the valves under all design conditions. Therefore, it has been determined that the KVAP software program error constitutes a defect, reportable under 10CFR21.

"Four safety-related containment isolation valves in the High Pressure Injection system were impacted, requiring entry into TS 3.6.3, Containment Isolation Valves, on two Oconee units [Units 2 and 3]."

Unit 1 was shutdown for a refueling outage at the time of this event and the actuator spring was replaced during the outage. The valves on units 2 and 3 required a Notification of Enforcement Discretion (NOED) which occurred on June 2, 2011. Three of the four valves were declared operable on June 10, 2011 and the remaining valve was declared operable the next day.

The licensee notified the NRC Resident Inspector.

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IE19
NRR

Attachment B **OMP 1-14**

NRC Event Notification Worksheet Page 1 of 2

NRC Event Notification Worksheet				
Notification Time	**Facility or Organization**	**Unit**	**Caller's Name**	**Call Back #**
	Oconee Nuclear Station	1, 2, 3	Sandra Severance	ENS 256-9931 (864) 873-3466

NRC Operations Officer Contacted:	NRC Event Number:

Event Time/Zone	Event Date	Power/Mode Before	Power/Mode After
1152 EST	6/7/2011	Unit 1: Mode 6 Unit 2: 100% Unit 3: 100%	Unit 1: 100% Unit 2: 100% Unit 3: 100%

Event Classifications

- ☐ General Emergency
- ☐ Site Area Emergency
- ☐ Alert
- ☐ Unusual Event
- ☐ 50.72 Non-emergency (see other columns)
- ☐ 72.75 Spent Fuel (ISFSI)
- ☐ 73.71 Physical Security
- ☐ Transportation
- ☐ 20.2202 Material/Exposure
- ☐ 26.73 Fitness for Duty
- ☒ Other: 21.21(d)(3)(i)

1-Hour Non-emergency 10 CFR 50.72 (b)(1)

- ☐ Deviation from TS per 50.54(x)

4-Hour Non-Emergency 10 CFR 50.72 (b)(2)

- ☐ (i) TS Required Shutdown
- ☐ (iv) (A) ECCS Discharge into RCS
- ☐ (iv) (B) RPS Actuation (while critical)
- ☐ (xi) News release/notification to other government agencies

8-Hour Non-Emergency 10 CFR 50.72 (b) (3)

- ☐ (ii) (A) Degraded Condition
- ☐ (ii) (B) Unanalyzed Condition
- ☐ (xiii) Loss of emergency assessment capability/offsite communications
- ☐ (iv) (A) System Actuation
  - ☐ RPS
  - ☐ Containment isolation
  - ☐ ECCS
  - ☐ EFW
  - ☐ Containment spray/coolers
  - ☐ Emergency AC (Keowee Hydro)
- ☐ (v) (A) Safe Shutdown Capability
- ☐ (v) (B) Residual Heat Removal Capability
- ☐ (v) (C) Control of radiological material
- ☐ (v) (D) Accident Mitigation
- ☐ (xii) Transport contaminated person to offsite medical facility

Attachment B **OMP 1-14**

NRC Event Notification Worksheet Page 2 of 2

Event Description (Include systems affected, actuations and their initiating signals, causes, effect of event on plant, actions taken or planned, etc.)
Event: In KVAP Error Report 2011-02, Kalsi Engineering identified an error in the Kalsi Engineering Valve and Actuator Program (KVAP) software that provides default flow and torque coefficients for ball and plug valves which can affect margin predictions. Communication between Kalsi and Duke Energy personnel confirmed that non-conservative torque values were calculated for select ball valves used at Oconee for containment isolation. As a result of the Kalsi error, the non-conservatively calculated torque values resulted in negative actuator margins, calling into question the actuators' capability to close the valves under all design conditions. Therefore, it has been determined that the KVAP software program error constitutes a defect, reportable under 10CFR21.
Initial Safety Significance: Four safety-related containment isolation valves in the High Pressure Injection system were impacted, requiring entry into TS 3.6.3, Containment Isolation Valves, on two Oconee units.
Corrective Action(s): 1. Upon further calculation, two of the containment isolation valves were determined to have adequate margin and were declared operable. 2. Two other containment isolation valves required modifications to restore operability.

Anything unusual or not understood?	☐ Yes (Explain above)	☒ No
Did all systems function as required?	☒ Yes	☐ No (Explain above)
Mode of operations until corrected:	Estimated restart date:	

Does event result in a radiological release, RCS leak, or steam generator tube leak?	☐ Yes (complete page 3)	☒ No

Does the event result in any of the units experiencing a transient?	☐ Yes (complete Oconee Plant Status sheet)	☒ No

Notifications			
NRC Resident: Andy Sabisch	(Y)N/will be	Plant Manager:	Y/N/will be
Notified By: Kent Alter	Time: 1540	Notified By:	Time:
State(s): N/A	Y(N)/will be	Operations Superintendent:	Y/N/will be
Notified By:	Time:	Notified By:	Time:
Local: N/A	Y(N)/will be	Other Government Agencies:	Y(N)will be
Notified By:	Time:	Notified By:	Time:
Media/Press Release: N/A	Y(N)will be	Other: Preston Gillespie	(Y)N/will be
Notified By:	Time	Notified By S N Sweranay	Time 1235

Operations Shift Manager/Emergency Coordinator Approval:	**Date/Time:**
Sandra S Vaderson	06-13-11 1556
NRC Notification Complete by Caller/NRC Communicator:	**Date/Time:**