

Andersen, James

From: Matharu, Gurcharan
Sent: Wednesday, October 24, 2012 9:03 AM
To: Sahay, Prem
Cc: Robles, Jesse; Andersen, James; Mathew, Roy
Subject: RE: Wolf Creek IFR 2012-04 - TAC ME8004

Outside of Scope

Singh

From: Matharu, Gurcharan
Sent: Wednesday, October 24, 2012 8:50 AM
To: Sahay, Prem
Cc: Robles, Jesse; Andersen, James; Mathew, Roy
Subject: FW: Wolf Creek IFR 2012-04 - TAC ME8004

Prem,
In the Wolf Creek event, root cause for LOOP was the transformer wiring and inadequate attention to detail during the modification process.

Outside of Scope

Outside of Scope

Singh

From: Robles, Jesse
Sent: Friday, October 19, 2012 1:53 PM
To: Matharu, Gurcharan
Subject: FW: Wolf Creek IFR 2012-04 - TAC ME8004

I also forgot to mention that the transformer issue resulted in a Yellow Finding:

Apparent Violation

Initiating Events	01/13/2012	WC	Yellow	*SCWE: N	*HP: Y	*PIR: N
--------------------------	------------	----	---------------	----------	--------	---------

Docket/Status: 05000482 (O)

Open: [ML12227A919](#)

(PIM) Failure to provide adequate oversight of contractors during maintenance on the Startup Transformer

The team reviewed a self-revealing apparent violation of Technical Specification 5.4.1.a and Regulatory Guide 1.33 for the failure to follow procedures. Specifically, the electrical penetration seal and wiring assembly associated with the H1/CT4 and H2/CT5 current transformers installed in the startup transformer (XMR01) were replaced without insulating two of the splices, as required by Work Order 11-240360-006, Revision 3. This affected safety-related equipment on January 13, 2012, when the startup transformer experienced a spurious trip and lockout during a plant trip because the two uninsulated wires touched and provided a false high phase differential signal to the protective relaying circuit. The protective lockout caused a prolonged loss of offsite power to Train B equipment. The licensee's root cause analysis concluded that the Startup Transformer failure on January 13, 2012, was caused by the failure to provide adequate oversight of contractors. As a result, the licensee failed to identify that electrical maintenance contractors had failed to install insulating sleeves on wires that affected the differential current protection circuit. This issue was entered into the corrective action program as Condition Report 47653. The licensee's corrective actions included reworking the current transformer junction block to correct the missing insulation sleeves and updating station procedures to require oversight of contractors performing work on risk significant components. This finding was more than minor because it affected the human performance attribute of the Initiating Events Cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions. This deficiency resulted in the failure of the fast bus transfer and the failure to maintain offsite power to safety-related loads during a reactor/turbine trip. The team performed the significance determination using NRC Inspection Manual Chapter 0609, Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," dated January 10, 2008, because it affected the Initiating Events Cornerstone while the plant was at power. The Phase 1 screened to a Phase 3 because the finding contributed to both the likelihood of a reactor trip and the likelihood that mitigation equipment would not be available; it was also potentially risk significant due to seismic external initiating event core damage sequences. A Senior Reactor

Analyst performed a Phase 3 analysis using the Wolf Creek SPAR model, Revision 8.20. The performance deficiency was determined to impact all transient sequences, particularly those involving losses of essential service water and/or component cooling water that led to a reactor coolant pump seal loss of coolant accident. The loss of cooling water prevented successful room cooling for mitigation equipment as well as loss of containment recirculation phase cooling. The analyst used half (98.5 days) of the period since the last successful load transfer, since the actual time of failure could not be determined from the available information. Credit for recovery of limited non-vital loads on the startup transformer was given based on licensee troubleshooting results, however no recovery credit was available for room cooling, since the licensee had no preplanned alternate room cooling measures. The evaluation of external events showed a small contribution due to fires. The increase in the core damage probability (ICCDP) was determined to be $2.59E-5$. This was a YELLOW significance. The evaluation of large early release failures resulted in an ICLERP of $1.62E-7$. This was a WHITE significance, which is superseded by the YELLOW significance of the ICCDP. This finding had a human performance cross-cutting aspect associated with the work control component in that licensee personnel associated with the oversight of the work did not appropriately coordinate work activities, and address the impact of changes to the work scope consistent with nuclear safety [H.3(b)] (Section 40A5.2).

From: Robles, Jesse
Sent: Thursday, October 18, 2012 1:47 PM
To: Matharu, Gurcharan
Subject: Wolf Creek IFR 2012-04 - TAC ME8004

Attached is the information for IFR 2012-04. You can see some examples of IFR evaluation memos [here](#). If you have any questions, please let me know. Thank you.

Jesse E. Robles
U.S. Nuclear Regulatory Commission
Reactor Systems Engineer
NRR/DIRS/IOEB
301-415-2940
301-415-3061 (fax)
Jesse.Robles@nrc.gov