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SOUTHERN COMPANY
Energy to Serve Your World℠

November 10, 2009

LR-PM-004-1109

Mr. Bruno Caballero
United States Nuclear Regulatory Commission
Sam Nunn Atlanta Federal Center
61 Forsyth Street SW, Suite 24T131
Atlanta, Georgia 30303-8931

Subject: Transmittal of 2009-302 Operating Examination Post Exam Comments

Dear Mr. Caballero:

In accordance with NUREG 1021, ES-501, "Initial Post-Examination Activities," this is to inform you that Plant Hatch has one post exam comment on the Operating Exam administered the week of October 26th, 2009.

Enclosed is the discussion and recommended resolution.

If you have any questions regarding this material, please contact Charlie Edmund at (912) 366-2000, ext 3773 or Anthony Ball at (912) 366-2000, ext 3772.

Sincerely,

Dennis R. Madison
Vice President Nuclear Plant Site

JPM SIM 1 Comments:

JPM SIM 1, "Start an Adjustable Speed Drive (ASD) from the Control Room," was administered as part of the 2009-302 operating exam.

While performing as the Simulator Facility operator for the administration of the JPM, it was observed that there was a variance in completion times of the JPM. After the JPM was completed for all applicants, the Chief Examiner questioned the basis for the Standard for JPM step 9, a critical step.

The Standard for step 9 required the operator to place the ASD control switch to the STOP position or depress the SHUTDOWN pushbutton within 5 minutes of receiving annunciators indicating a loss of cooling to the ASD and that the ASD should have tripped.

This standard had been modified during prep week activities based on comments from the Chief Examiner dealing with how long should be allowed to trip or shutdown the ASD. The 5 minutes was based on the fact that there were 3 annunciators that sequentially alarmed over a 12 second period. It was estimated that it would take approximately 1 minute to address each of the 3 alarms, 1 minute to dispatch an operator to the ASD in accordance with the annunciator response procedures for the alarms, and 1 minute to trip or shutdown the ASD. The time to perform these actions, when totaled, equaled 5 minutes. It was discussed that double the allotted time would allow a total time of ten minutes to trip the ASD, but this doubled time was not noted in the Step 9 standard. The reason for using this approach was because an engineering basis for the time was not available and Plant Hatch does not have a defined time standard for these actions.

The vendor for the ASD (VFD), Siemens Industry, was contacted to assist in determining the amount of time that the ASD transformer could be operated with a loss of cooling to the transformer. The following are excerpts from the vendor response:

> "In the case of the power cells, if cells were to start bypassing because of the temperature being over 65C as measured by their internal sensor, then the VFD would trip once to many cells were bypassed. In the case of the transformer if the average temp of the transformer went up consistently no cells would be bypassed, but the transformer can withstand a higher temperature than the cells and there is a lot more thermal mass to heat up.
>
> "I am not sure if it is possible to put a definite time frame on when damage would occur if no temperature trips occurred. There are two variables that I can think of now that would cause variations in the time. Initial water temperature when the pumps failed and the VFD output current while there is no cooling water flowing. The biggest would be the output current."
>
> "Also, one last item I just thought of. If the pumps were to seize, and no temperature alarms occurred. There would be the flow loss alarm from the cooling system as well as alarms for the pumps not running/over current/etc.
>
> This has been tested before here at Siemens where the cooling pumps were "Dead Headed" and the VFD was allowed to run. The cells were the device that tripped the VFD on over temperature faults."

As can be interpreted from the vendor's response, there is not a definitive time for tripping the ASD prior to causing significant damage to the transformer.

Continuing with further review of the Step 9 standard, it was recognized that neither the JPM nor any portion of the JPM had been marked as Time-Critical. Also, none of the applicants were informed that the JPM was Time-Critical as required by NUREG 1021. In fact, based on the following excerpt from NUREG 1021, this JPM is not Time-Critical because shutting down the ASD under the loss of cooling conditions that were presented to the applicants does not have a time period specified in a regulation, nor is it a facility commitment to the NRC.

NUREG 1021, Appendix C step B.5

5. Develop a Time Standard

Every JPM shall identify an estimated average time for completing the task. The time should be measured from the moment that the examinee is read the initiating cue at the plant location in which an operator would normally be given the order to perform the specified task.
JPMs that are considered time-critical (i.e., those having a task standard that must be completed within a time period specified in a regulation or a facility commitment to the NRC) shall be uniquely identified and specifically validated. The facility licensee must agree that a failure to complete the task within the specified time will justify a failure of the given JPM.

NUREG 1021, Appendix E, D.4

4. Before beginning each JPM, the examiner will describe the initial conditions, explain the task that is to be completed, indicate whether the task is time-critical, and explain which steps are to be simulated or discussed.

Recommended Resolution:

The recommendation for this JPM is that the standard for step 9 be changed such that "within 5 minutes of receiving the alarms" is deleted from the standard because JPM SIM 1 is NOT a Time-Critical JPM.

The normal time allowance for completion of a JPM that is NOT Time-Critical, as described in the following NUREG excerpt, should be used for the time standard for completing the JPM. The validated time for the JPM was 15 minutes.

NUREG 1021, Appendix E, D.5

5. Time-critical JPMs have been validated by your facility and must be completed within the predetermined time interval in order to obtain a satisfactory grade for that JPM. You will be permitted to take whatever time is necessary to complete those JPMs that are not time-critical, provided that you are making reasonable progress toward achieving the task standard. If the examiner believes that you are not making reasonable progress, he will ask you to explain what remains to be done and how long it should take before stopping the task. You will be permitted at least twice the validated time to complete the JPM, whether you are making progress or not.

If you have any questions regarding this information, please contact Charlie Edmund at (912) 366-2000, ext 3773 or Anthony Ball at (912) 366-2000, ext 3772.

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November 16, 2009

LR-PM-005-1109

Mr. Bruno Caballero
United States Nuclear Regulatory Commission
Sam Nunn Atlanta Federal Center
61 Forsyth Street SW, Suite 24T131
Atlanta, Georgia 30303-8931

Subject: Transmittal of 2009-302 Written Examination Post-Exam Comments

Dear Mr. Caballero:

In accordance with NUREG 1021, ES-501, "Initial Post-Examination Activities," post exam comments are due within 5 days of exam administration.

This is to inform you that for the NRC Initial License written exam administered at Plant Hatch on November 12th, 2009 (Hatch 2009-302) there were no post-examination question comments from the applicants.

If you have any questions regarding this material, please contact Charlie Edmund at (912) 366-2000, ext 3773 or Anthony Ball at (912) 366-2000, ext 3772.

Sincerely,

FOR DENNIS MADISON

Dennis R. Madison
Vice President Nuclear Plant Site