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ACCESSION NBR: 8804140003 DOC. DATE: 88/04/06 NOTARIZED: YES DOCKET #
 FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylv 05000387
 50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylv 05000388
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 RECIP. NAME BUTLER, W. R. RECIPIENT AFFILIATION Project Directorate I-2

SUBJECT: Forwards application for proposed Amends 110 & 61 to Licenses NPF-14 & NPF-22, respectively. R

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SUSQUEHANNA STEAM ELECTRIC STATION
PROPOSED AMENDMENTS 110 AND 61 TO
LICENSE NOS. NPF-14 AND NPF-22:
REVISIONS TO TECH SPEC ACTION 70
PLA-3015 FILES A17-2, R41-2

Docket Nos. 50-387
50-388

Dear Dr. Butler:

The purpose of this letter is to propose changes to the Susquehanna SES Units 1 and 2 Technical Specifications in order to correct what we believe to be an unwarranted requirement in Action 70 of Specification 3/4.3.7.1, "Radiation Monitoring Instrumentation."

BACKGROUND

Specification 3/4.3.7.1, "Radiation Monitoring Instrumentation," requires Action 70a to be invoked upon loss of a Main Control Room Outside Air Intake Monitor. It states:

"With one of the required monitors inoperable, place the inoperable channel in the downscale tripped condition within 1 hour; restore the inoperable channel to OPERABLE status within 7 days, or, within the next 6 hours, initiate and maintain operation of the control room emergency filtration system in the isolation mode of operation."

If a channel has not already been tripped due to the inoperable condition, placing a channel in the downscale tripped condition causes initiation of the Control Room Emergency Outside Air Supply System (CREOASS) in the isolation mode. Therefore, Action 70a requires that either a trip be initiated within 1 hour (which makes the balance of the action statement ineffective since it requires initiation of a system that is already in operation), or that a jumper be inserted that will preclude a CREOASS initiation. Installation of a bypass in order to carry out a one hour action statement should not be required due to the inherent potential for human error which could result in further degradation of the system.

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DESCRIPTION OF CHANGE

PP&L is proposing that Action 70a be revised as follows (see attached marked-up pages):

"With one of the required monitors inoperable, restore the inoperable channel to OPERABLE status within 7 days, or, within the next 6 hours, initiate and maintain operation of the control room emergency filtration system in the isolation mode of operation."

SAFETY ANALYSIS

The proposed change will preclude actions which would result in Control Room annunciation and CREOASS initiation for the 7 day allowed restoration time of an inoperable Main Control Room Outside Air Intake Radiation Monitor during situations (typically surveillance testing) where an actual upscale trip was not the initial indication of channel inoperability. The impact of this proposal on the safe operation of SSES is discussed below.

The purpose of the Control Structure Outside Air Intake Radiation Monitoring System is to continuously monitor the outside air intake for airborne radioactivity which is entering the Control Structure HVAC system. High radiation results in a trip signal which initiates CREOASS, an Engineered Safety Feature (ESF) system designed to ensure a habitable environment for the control room operators (ref. FSAR subsection 11.5). Together, these systems ensure compliance with the radiation protection requirements specified in General Design Criteria 19 of 10 CFR 50, Appendix A.

The monitoring system extends from radiation elements (GM tubes) situated near the outside air intake plenum to indicator and trip units which ensure that various annunciators and trips occur. Figure 1, taken from the General Electric Operating and Maintenance Instructions for the indicator and trip unit, illustrates the normally energized trip circuitry associated with this system. The important points to note are:

- o The circuit contains a four pole mode switch, S1, that can be set in one of three positions: operate, zero, or trip test. "Operate" is used for normal monitoring, "zero" is used for maintenance, and "trip test" is used for manual trips and trip circuit testing.
- o While the mode switch is in "operate", only pole S1B is open. In this condition, subsequent deenergization of relay K1 initiates a downscale/inoperative alarm; deenergization of relay K2 initiates upscale trip and alarm functions. Figure 1 illustrates one of two redundant trip channels which provide these functions. As a system, this logic is one-out-of-two-once to provide either the upscale or the downscale function; therefore, a "half-trip" condition cannot be imposed on the system.



[The text in this section is extremely faint and illegible. It appears to be a multi-paragraph document, possibly a letter or a report, with several lines of text scattered across the page. Some faint words like "Dear" and "Sincerely" might be discernible, but the rest is lost to noise and low contrast.]

- o Placing the mode switch in "trip test" causes poles S1A, S1C, and S1D to open. Due to the position of S1D in the circuitry, opening it causes an upscale trip.

The contacts associated with pole S1D are used to initiate CREOASS. Therefore, the design does initiate CREOASS if the mode switch of either channel is placed in "trip test", which PP&L believes is the only way to place a channel in the "downscale tripped condition". Accordingly, a jumper is required to avoid causing a trip under the action statement.

It is PP&L's belief that it is not the intent of the Technical Specifications to require jumpers to perform action requirements; furthermore, it is not their intent to unnecessarily cause ESF actuations. This philosophy is clear based on its use in other ESF instrumentation systems such as the Reactor Protection System and the Primary Containment Isolation System, where the associated specifications (ref. 3/4.3.1 and 3/4.3.2) include specific provisions which ensure that needless trips do not occur, and these provisions do not require the use of jumpers. They simply provide a short amount of time to restore the channel commensurate with the system's degraded redundancy, after which a more drastic action is required.

When a trip/annunciation has not already occurred, a jumper could be used to provide a downscale annunciation without an upscale trip. This may seem useful in alerting the operator that he has an inoperable monitor. In reality, because he was informed that a surveillance was failed, he has logged in the associated action, and is very cognizant of the allowed outage time so that appropriate followup actions are taken if the inoperable monitor is not restored. Furthermore, actuation of the annunciator masks an alarm from the downscale channel of the operable monitor, since the annunciator is common.

Based on the above, the proposed change will not adversely impact the safety function of CREOASS nor its detection instrumentation. Furthermore, safety will be enhanced by minimizing the need for jumpers and unnecessary ESF system initiations.

NO SIGNIFICANT HAZARDS CONSIDERATIONS

The proposed change does not:

- I. Involve a significant increase in the probability or consequences of an accident previously evaluated. The proposed change has no impact on the automatic functioning of CREOASS to support its safety function of protecting control room habitability. The Technical Specifications will continue to ensure that CREOASS is initiated after 7 days if an inoperable monitor is not restored. This action is sufficient to mitigate the inability of the instrumentation to withstand a single failure and still perform its safety function. Initiating CREOASS at one hour is not necessary to mitigate the degraded redundancy, and sufficient evidence exists to show that this was never intended. Installing a jumper within one hour to prevent an unnecessary CREOASS initiation should not be required due to its inherent potential for human error.

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PHYSICS DEPARTMENT

CHICAGO, ILLINOIS

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FROM THE PHYSICS DEPARTMENT

RE: [Illegible]

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- II. Create the possibility of a new or different kind of accident from any accident previously evaluated. This change does not propose any physical or functional changes in the subject systems that could create the possibility of a new or different kind of accident. It merely ensures that CREOASS is not initiated before it is required.

- III. Involve a significant reduction in a margin of safety. As discussed under SAFETY ANALYSIS above, this change will enhance the reliability of the CREOASS system by reducing the need for unwarranted initiations. It will also eliminate the need to use jumpers within a short time period in certain cases; this will reduce the potential for human error. Both of these results will improve safety over the current requirements; no results were found which had an adverse impact on the safe operation of Susquehanna SES.

Any questions on the above material should be directed to Mr. R. Sgarro at (215) 770-7916. Pursuant to 10CFR170, the appropriate fee is enclosed.

Very truly yours,



H. W. Keiser
Sr. Vice President-Nuclear

Attachments

cc: NRC Document Control Desk (original)
NRC Region I
Mr. F. I. Young, NRC Resident Inspector-SSES
Mr. M. C. Thadani, NRC Project Manager-Bethesda
Mr. T. M. Gerusky, Pennsylvania DER

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