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SUBJECT: Transmits proposed amends 205 & 163 to licenses NPF-14 & NPF-22.

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**SUSQUEHANNA STEAM ELECTRIC STATION
PROPOSED AMENDMENT NO. 205 TO LICENSE
NPF-14 AND PROPOSED AMENDMENT NO. 163
TO LICENSE NPF-22: REVISION TO THE
OPERABILITY REQUIREMENTS OF THE REACTOR
COOLANT SYSTEM LEAKAGE DETECTION
INSTRUMENTATION**

**Docket No. 50-387
and 50-388**

PLA-4504 FILE R41-2

The purpose of this letter is to transmit proposed amendments to the Susquehanna SES Unit 1 and Unit 2 Technical Specifications. This proposed change revises the operability requirements for the reactor coolant system leakage detection instrumentation.

BACKGROUND

The purpose of the reactor coolant system leakage detection systems is to detect leakage from the reactor coolant pressure boundary so that appropriate actions can be taken before the integrity of the reactor coolant pressure boundary is impaired. The reactor coolant system leakage detection systems at Susquehanna SES are composed of the drywell floor sump level monitoring system (primary system for leak detection), the gaseous radioactivity monitoring system and the particulate radioactivity monitoring system. Pennsylvania Power & Light Company recently made a design change that provided separate containment penetrations for the individual loops of the gaseous and particulate radioactivity monitoring systems. Previously, the gaseous and particulate radioactivity monitoring systems shared containment penetrations with the Post Accident Sample System. Because of the isolation requirements for the gaseous and particulate radioactivity monitoring systems penetrations, both loops of these systems are isolated when a division of the Reactor Protection System (RPS) is actuated or when power is lost to an RPS bus. The Technical Specifications as currently written do not have an action for the inoperability (isolation) of both loops (all channels) of the gaseous and particulate radioactivity monitoring

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systems at the same time. Therefore, Technical Specification 3.0.3 must be entered. The entry into Technical Specification 3.0.3 is unnecessarily conservative since the gaseous and particulate radioactivity monitoring systems are a backup system to the primary leak detection system (drywell floor sump level monitoring system). Also, the current Technical Specifications does not address the loss of all the reactor coolant system leakage detection systems. This proposed change addresses these issues.

DESCRIPTION OF CHANGE

This proposed change:

1. revises the required number of operable gaseous radioactivity monitoring system channels and particulate radioactivity monitoring system channels from one in each of the monitoring systems to one in either of the monitoring systems,

2. allows both the gaseous radioactivity monitoring system and the particulate monitoring system to be inoperable for up to 30 days provided that grab samples are obtained and analyzed at least once per 12 hours, and

3. adds an action for the loss of all reactor coolant system leakage detection systems (drywell floor sump level monitoring system, gaseous radioactivity monitoring system and particulate radioactivity monitoring system).

Refer to the attached marked up Technical Specifications.

SAFETY ANALYSIS

General Design Criteria 30 of 10 CFR 50, Appendix A, requires means for detecting and identifying the location of the source of Reactor Coolant System (RCS) leakage. Regulatory Guide 1.45 describes acceptable methods for selecting leakage detection systems.

Limits on leakage from the reactor coolant pressure boundary (RCPB) are required so that appropriate action can be taken before the integrity of the RCPB is impaired. Leakage detection systems for the RCS are provided to alert the operators when leakage rates above normal background levels are detected and also to supply quantitative measurement of leakage rates.

Leakage from the RCPB inside the drywell is detected by at least one of three independently monitored variables, sump level changes, gaseous radioactivity levels, and particulate radioactivity levels. The primary means of quantifying leakage in the drywell is the drywell floor drain sump level monitoring system. This monitoring system consists of two drywell floor drain sump level channels.

The primary containment air monitoring systems continuously monitor the primary containment atmosphere for airborne particulate and gaseous radioactivity. A sudden increase of radioactivity, which may be attributed to RCPB steam or reactor water leakage, is annunciated in the control room. The primary containment atmosphere particulate and gaseous radioactivity monitoring systems are not capable of quantifying leakage rates. These monitors provide an alternate and diverse means of leak detection to that supplied by the drywell floor sump level monitors.

Requiring only one channel of either the gaseous radioactivity monitoring system or particulate radioactivity monitoring system to be operable is acceptable since the purpose of these monitoring systems is to provide an alternate means of leak detection to that supplied by the drywell floor sump level monitoring system. These systems can not quantify the leakage rate; they can only alert the operators of a leak.

Allowing both the gaseous and particulate monitoring systems to be inoperable as long as grab samples are obtained and analyzed at least once per 12 hours is acceptable since the gaseous and particulate monitoring systems are redundant to the drywell floor sump level monitoring system which remains operable. The 12 hour interval provides periodic information that is adequate to detect leakage. Allowing 30 days to restore at least one channel of either the gaseous or particulate radioactivity monitoring systems recognizes that at least one drywell floor sump level monitoring system is operable.

With all channels of the reactor coolant system leak detection systems inoperable, monitoring for leakage in the RCPB is significantly degraded since no automatic means of monitoring leakage are available. Since a major crack could occur and threaten the RCPB integrity without the knowledge of the operator, an orderly shutdown of the plant upon the loss of all channels of the reactor coolant leak detection systems provides an adequate response before a significant break in the RCPB can occur.

NO SIGNIFICANT HAZARDS CONSIDERATIONS

1. ***Involve a significant increase in the probability or consequences of an accident previously evaluated.***

   The function of the reactor coolant system leakage detection systems is to detect leakage from the reactor coolant pressure boundary so that appropriate actions can be taken before the integrity of the reactor coolant pressure boundary is impaired. In the plant accident analysis, no credit for mitigation of an accident is taken for the reactor coolant system leakage detection systems. These proposed changes do not alter this function; therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. ***Create the possibility of a new or different kind of accident from any accident previously evaluated.***

   The function of the reactor coolant system leakage detection systems is to detect leakage from the reactor coolant pressure boundary so that appropriate actions can be taken before the integrity of the reactor coolant pressure boundary is impaired. These proposed changes do not alter this function; therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. ***Involve a significant reduction in a margin of safety.***

   The change to allow both the gaseous and particulate radioactivity monitoring systems to be inoperable at the same time provided a grab sample is obtained and analyzed at least once per 12 hours is predicated on the availability of the primary leak detection system (drywell floor sump level monitor system). Since the gaseous and particulate radioactivity monitoring systems are backups to the drywell floor sump level monitoring system, allowing grab samples every 12 hours provides periodic information that is adequate to detect leakage. The addition of the action to require an orderly shutdown of the unit for the loss of all reactor coolant system leakage detection systems does not affect the margin of safety. Therefore, these proposed changes do not involve a significant reduction in a margin of safety.

IMPLEMENTATION

Pennsylvania Power & Light Company requests that this change be approved by January 15, 1997.

If you have any questions, please contact Mr. C. T. Coddington at (610) 774-7531.

Very truly yours,

R. G. Byram

Attachment

copy:NRC Region I

Mr. K. Jenison,	NRC Sr. Resident Inspector
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