SNUPPS

Standardized Nuclear Unit
Power Plant System

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Nicholas A. Petrick
Executive Director

February 2, 1983

SLNRC 83-0004 FILE: 0278
SUBJ: ICSB Review

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Docket Nos. STN 50-482 and STN 50-483

Reference: SLNRC 81-111, dated September 22, 1981

Dear Mr. Denton:

Safety Evaluation Report Confirmatory Issue No. 9 for Callaway (No. 0.10 for Wolf Creek) requires modification of the SNUPPS Final Safety Analysis Report to provide a description of operator actions, equipment involved and redundancy of equipment available to maintain extended hot standby conditions from outside of the control room. The enclosure to the referenced letter described one possible method of borating the reactor coolant system to maintain extended hot standby conditions; however the described method relied on certain non-redundant equipment. The enclosure to this letter describes an alternate method of maintaining extended hot standby conditions from outside the control room through the use of redundant, safety-grade equipment only.

Information from the enclosure will be incorporated in a future revision to the SNUPPS FSAR.

Very truly yours,

[signature] for

Nicholas A. Petrick

MHF/nld/[illegible]8
Enclosure: Boration from Outside the Control Room

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Enclosure

Boration From Outside The Control Room

The SNUPPS design permits maintaining extended hot standby conditions from outside the control room through the use of redundant, safety-grade systems only. This is accomplished by means of the controls and indications on the auxiliary shutdown panel (ASP) and the additional controls listed in Section 7.4.3.1.2 of the FSAR. Prior to approximately 25 hours after reactor shutdown, sufficient boron must be added to the reactor coolant system (RCS) to cancel the effects of xenon decay.

Boration can be accomplished from outside the control room using only redundant safety grade equipment by operating one of two centrifugal charging pumps, taking suction from the refueling water storage tank (RWST), and charging into the RCS through either the normal charging path or the boron injection tank flow path.

In the absence of a safety injection (SI) signal, one centrifugal charging pump would be started from its switchgear (NB01 or NB02) and isolation of normal letdown from the ASP would cause automatic realignment of pump suction from the volume control tank (VCT) to the RWST, via a VCT low level signal. Charging into the RCS could be through the normal charging line, in which all air-operated valves are fail-open. An alternative charging path is the boron injection tank flow path. The normally-closed valves in that path can be opened using local switches at motor control centers NG03C and/or NG04C.

To provide sufficient volume for the injection of additional borated water to the RCS, a reduction of RCS average temperature can be accomplished by manually controlling steam release to the atmosphere from the redundant secondary-side atmospheric relief valves. Necessary controls and instrumentation are on the ASP. Under the conditions of RCS makeup from the RWST, no letdown, and pressurizer level maintained within the normal range, sufficient boron can be added to the RCS to maintain $k_{eff} \leq 0.99$ at all temperatures between normal operating temperature and $80^{o}F$ at any time in core life, assuming that the xenon concentration in the core at the time of shutdown was the equilibrium value or less. In addition, sufficient boron can be added in this manner to maintain extended hot standby conditions. Therefore, the SNUPPS design permits achieving extended hot standby conditions from outside the control room by means of redundant, safety-grade systems and equipment only.