SNUPPS

Standardized Nuclear Unit Power Plant System

5 Choke Cherry Road
Rockville, Maryland 20850
(301) 869-8010

Nicholas A. Petrick
Executive Director

May 31, 1984

SLNRC 84-0089 FILE: 0543/0278
SUBJ: SNUPPS Technical Specifications
Reactor Systems Branch Issues

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

Ref: 1. SLNRC 84-080, 5/14/84, Same Subject
2. SLNRC 84-082, 5/16/84, Same Subject
3. SLNRC 84-087, 5/25/84, Same Subject
4. NRC (B.J. Youngblood) letter to UE (D.F. Schnell) and KGE (G.L. Koester) dated 5/7/84, Request for Additional Information
5. NRC (B.J. Youngblood) letter to UE (D.F.Schnell) and KGE (G.L. Koester) dated 5/14/84, Request for Additional Information

Dear Mr. Denton:

References 1, 2, and 3 forwarded SNUPPS responses to 18 questions posed by Reactor Systems Branch in references 4 and 5. Forwarded herewith is an amplification to the response for item 15 originally included in reference 1. This response incorporates the decisions reached during May 30, 1984 discussions with the NRC. With this response SNUPPS considers the issues raised by references 4 and 5 to be closed.

Very truly yours,

J D Cermak for

Nicholas A. Petrick

JHR/mjd/2b26
Attachment

cc: D. F. Schnell UE
G. L. Koester KGE
D. T. McPhee KCPL
J. Neisler/B. Little USNRC/CAL
H. Bundy USNRC/WC
B. L. Forney USNRC/RIII
E. H. Johnson USNRC/RIV

B001
1/1

15. Several Technical Specification Sections

The different sections in the Technical Specifications state limits on minimum and/or maximum values of process variables, e.g., temperature, pressure, flow rates, levels, and volumes.

The staff is concerned that (a) The process variable limits discussed above are not, in all cases, used in the safety analyses. This concern is discussed under item 15 above and (b) that the analyses assumptions do not always start from the specified values in the Tech Specs after adding an instrumentation error and uncertainty allowance. For example, Section 3.2.5 specifies the maximum T_{ave} to be $\leq$ 595°F during Mode 1. Additionally the Callaway FSAR states that the temperature error used in the safety analyses is $\pm$6.5°F. Therefore, the staff believes that if the T_{ave} limit in the Tech Specs is $\leq$595°F, then the safety analyses where the higher temperature is more limiting should assume a T_{ave} value of 595° $\pm$ 6.5 or 601.5°F as an initial condition.

The staff requires that the applicant: (1) provide justification for not assuming in the safety analyses steady state conditions that are consistent with the limits specified in the Tech Specs after adding a conservative uncertainty margin, and (2) provide a discussion in the bases for choosing the uncertainty margin. The applicant should make a distinction between the value of the parameter as measured and limited by the Tech Specs and the value of the parameter as assumed in the safety analyses.

Response:

#15 The Accident Analysis assumes event initiation from nominal conditions with allowances for uncertainties such as measurement error and control dead band. These nominal conditions are maintained by automatic control systems such that deviation from the nominal operating points are limited to within the allowance bands. It is not necessary to add to the Technical Specifications restrictions on all process variables used in the Safety Analysis. Where the Technical Specifications do contain restrictions on process variables the specified limiting values are typically actual values, that is either design values or those used in the analysis without additional allowances for measurement uncertainty. Where it is necessary to consider measurement uncertainty, the Technical Specifications specifically address (with the exception of RCS TAVG and Pressurizer Pressure) the manner in which uncertainties are considered. In the case of RCS TAVG and Pressurizer Pressure the attached Technical Specifications have been changed to clarify this situation.

All values in the Technical Specifications other than those whose uncertainties are specifically specified whether analytical, design, etc. may be treated as indicated values without regard for instrument uncertainties. This is acceptable because of the relatively small magnitude of typical measurement uncertainties (one to two percent of calibrated span) when compared to the conservatisms included in the plant design and safety analysis. These measurement uncertainties are maintained small by conformance to the Operating Quality Assurance Program which includes requirements for controls of Measuring & Test Equipment, Documents, Design, Test and Inspection, and Procedures. Small deviations in tank levels or pressures, pump flow or discharge pressure, etc. resulting from measurement uncertainty are negligible considering the conservatisms upon which the "limiting" values are based.

By the methods described above the operator can compare indicated values (unless allowances for measurement uncertainties are specified) to those values in the Technical Specifications to ensure compliance, thereby eliminating the use of intermediate documents to account for measurement uncertainties.

In addition SNUPPS will support the Westinghouse Owners Group's efforts to pursue this and other issues identified in NUREG 1024 with the NRC Staff on a generic basis.

JHR/mjd/2a7

TABLE 3.2-1

DNB PARAMETERS

LIMITS

PARAMETER	Four Loops in Operation	Three Loops in Operation
Indicated Reactor Coolant System T_{avg}	$\leq$ 592.5°F	**
Indicated Pressurizer Pressure	$\geq$ 2220 psig*	**

*Limit not applicable during either a THERMAL POWER ramp in excess of 5% of RATED THERMAL POWER per minute or a THERMAL POWER step in excess of 10% of RATED THERMAL POWER.

**These values left blank pending NRC approval of three loop operation.

BASES

QUADRANT POWER TILT RATIO (Continued)

For purposes of monitoring QUADRANT POWER TILT RATIO when one excore detector is inoperable, the movable incore detectors are used to confirm that the normalized symmetric power distribution is consistent with the QUADRANT POWER TILT RATIO. The incore detector monitoring is done with a full incore flux map or two sets of four symmetric thimbles. The two sets of four symmetric thimbles is a unique set of eight detector locations. These locations are C-8, E-5, E-11, H-3, H-13, L-5, L-11, N-8.

3/4.2.5 DNB PARAMETERS

The limits on the DNB-related parameters assure that each of the parameters is maintained within the normal steady-state envelope of operation assumed in the transient and accident analyses. The limits are consistent with the initial FSAR assumptions and have been analytically demonstrated adequate to maintain a minimum DNBR of 1.30 throughout each analyzed transient. The indicated T_{avg} value of 592.5°F and the indicated pressurizer pressure value of 2220 psig correspond to analytical limits of 595°F and 2205 psig respectively, with allowance for measurement uncertainty.

The 12-hour periodic surveillance of these parameters through instrument readout is sufficient to ensure that the parameters are restored within their limits following load changes and other expected transient operation.