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AUTH.NAME AUTHOR AFFILIATION
SORENSEN,G.C. Washington Public Power Supply System
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SUBJECT: Provides program plan for resolution of concern re standby gas treatment sys,per NRC 900116 request.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

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February 16, 1990
G02-90-027

Docket No. 50-397

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: NUCLEAR PLANT NO. 2, OPERATING LICENSE NPF-21
STANDBY GAS TREATMENT SYSTEM (TAC NO. 75048)

Reference: 1. Letter, GI2-90-009, RB Samworth (NRC) to GC Sorensen (SS) "Evaluation of JCO Regarding Standby Gas Treatment System Attainment of Secondary Containment Pressure", dated 1/3/90

2. Letter, G02-89-176, GC Sorensen (SS) to NRC, "Unreviewed Safety Question Regarding Standby Gas Treatment", dated 9/29/89

Reference 1, received on January 16, 1990, requested that within thirty days of receipt we provide the program plan for resolution of the concern identified by the Supply System in reference 2 relative to establishing secondary containment pressure under all conditions. A schedule for all significant milestones was requested. Also, additional testing of the SGT fan capacity and secondary containment in-leakage was requested.

PROGRAM PLAN

On January 16 we presented to the NRC our proposed methodology and assumptions to achieve resolution of this issue. Included below is a summary of the information provided in that meeting that represents the major elements of what we would consider a "program plan" for resolution of the concern. As stated in that meeting, there remains a significant amount of internal and licensing documentation that must be revised once an agreed upon approach is obtained. Also, all of the quantitative results provided at that meeting remain to be verified, and technical points raised by the NRC regarding both assumptions and methodology need to be addressed.

A001

It is important for the Supply System to receive feedback from the NRC on the acceptability of the approach outlined at the January 16 meeting prior to expending the significant additional resources required to achieve closure of the secondary containment issues. It was our understanding from the meeting discussions that the NRC consented to provide feedback on the various elements of the method presented. Following receipt we will be able to develop a more complete program plan with detailed milestones.

The major elements of our proposed resolution as provided in the January 16 meeting are as follows:

Secondary Containment Model

A model of secondary containment will be used that is based upon the following features and assumptions:

The effect of outside air temperature and wind induced pressure on the windward and leeward sides will be included.

Leakage is distributed over the exposed building surface.

Leakage out of the building occurs whenever the inside pressure exceeds the outside pressure.

Leakage is directly proportional to the differential pressure (i.e. not a quadratic relationship).

No credit is taken for the heat capacity of cold incoming air.

The secondary containment boundary is adiabatic except for heat removed by the Standby Service Water System.

A coincident loss of off-site power is considered to be the worst case condition.

With this model, curves can be produced that determine the wind and temperature conditions for which a defined secondary containment draw down can be obtained. Each curve is representative of an assumed combination of secondary containment leakage and SGT flow. The attachment, for example, shows via the top curve the wind and temperature conditions for which -0.25 inches of water (wg) can be obtained at the secondary containment roofline within 20 minutes for a secondary containment leakage of 2050 cfm and an SGT flow of 5600 cfm. For any condition above the top curve, the SGT system is capable of maintaining the pressure at or below -0.25" wg. For any condition below the top curve, the SGT system will not be capable of pulling the roofline pressure to the full -0.25" wg. For conditions below the lower curve the pressure at the roof will be positive. Even under those conditions, it is reasonable to assume that much of the leakage will not be through the roof and the majority of the secondary containment building would remain at a negative pressure so significant filtering by SGT would actually occur as SGT continues to attempt to draw down the building pressure.

An important factor in establishing the 2050 cfm in-leakage and 5600 cfm SGT flow requirements is that the resultant building performance profile matches the joint frequency distribution for wind and temperature representing meteorological conditions that occur for greater than 95% of the time at WNP-2. This is an essential element of the planned resolution and represents a new design basis for SGT flow and allowable secondary containment in-leakage. These values of in-leakage and flow will maintain the roofline pressure at -0.25" wg (or more negative) at least 95% of the time. This assumption is consistent with Regulatory Guide 1.45 and Regulatory Guide 1.3 in establishing the Chi/Q values.

Dose Calculation Model

The model for calculating radiological releases is based upon the following assumptions:

No mixing within secondary containment.

No credit is taken for SGT filtering for 20 minutes (a shorter time may be assumed for the final resolution if supported by the secondary containment model).

NUREG/CR-5055 methodology is assumed for determining the control room doses.

Stability classes A through G are included in determining the Chi/Q values.

The Chi/Q values are based upon meteorological conditions not exceeded 95% of the time, in accordance with Regulatory Guide 1.3 and 1.45 methodologies.

The Chi/Q values are determined from the six years of accumulated data at the WNP-2 site.

Doses are not calculated for environmental conditions that occur less than or equal to 5% of the time.

Credit may be requested for suppression pool scrubbing per Standard Review Plan 6.5.5. The request, if made, will address the points raised by the NRC at the January 16 meeting.

Licensing Documentation Changes

The following changes in WNP-2 licensing documentation are expected for the proposed plan:

A Technical Specification amendment will be proposed to address the effects wind and temperature have on secondary containment. The amendment will include the changes to the bases section.

FSAR revisions will be required as follows:

Section 2.3 will be revised to incorporate the six years of meteorological data and the resulting Chi/Q values (the schedule and need for this is somewhat independent of the SGT resolution).

All Chapter 15 accident analyses will need to be revised for which off site consequences are provided and for which credit for SGT was taken.

Section 6.4 will be revised to provide new control room personnel doses.

The description of secondary containment in Section 6.2.3 will be revised.

The description of SGT and the reactor building HVAC system in Sections 6.5 and 9.4 will be revised.

The description of the high energy line break in Chapter 15 may be revised to delay credit for the SGTs function due to high inlet humidity. This is a Regulatory Guide 1.52 issue; for SGT credit humidity must be less than 70%.

In summary, the proposed plan includes:

Meeting with the NRC to describe the proposed plan in detail and respond to questions - completed January 16, 1990.

Feedback from the NRC regarding the acceptability of the plan and any concerns that will need to be addressed.

Request for, and receipt of, approval from the NRC of the application of SRP 6.5.5 to WNP-2 analyses, if required.

Resolution of any NRC concerns. (An additional meeting with the NRC may be needed to close on the methodology proposed.)

Completion and verification of the described models and analyses.

Revision to the WNP-2 Technical Specification submittal.

Receipt of the Technical Specification change and issuance of an SER.

Revision to internal design documentation.

Revision of WNP-2 licensing documentation.

TESTING

We commit to performing the requested testing of SGT for capacity and the secondary containment in-leakage during the next forced outage or our next refueling outage, which ever comes first. We believe this is acceptable based in large part on the refined calculations indicating that a secondary containment in-leakage flow of 2050 scfm (versus the 1450 scfm provided in the JCO) is more nearly the value supported by the analytical methods provided. In addition, the testing frequency is 12 months at WNP-2, versus an 18 ±25% month cycle as required by the Technical Specifications.

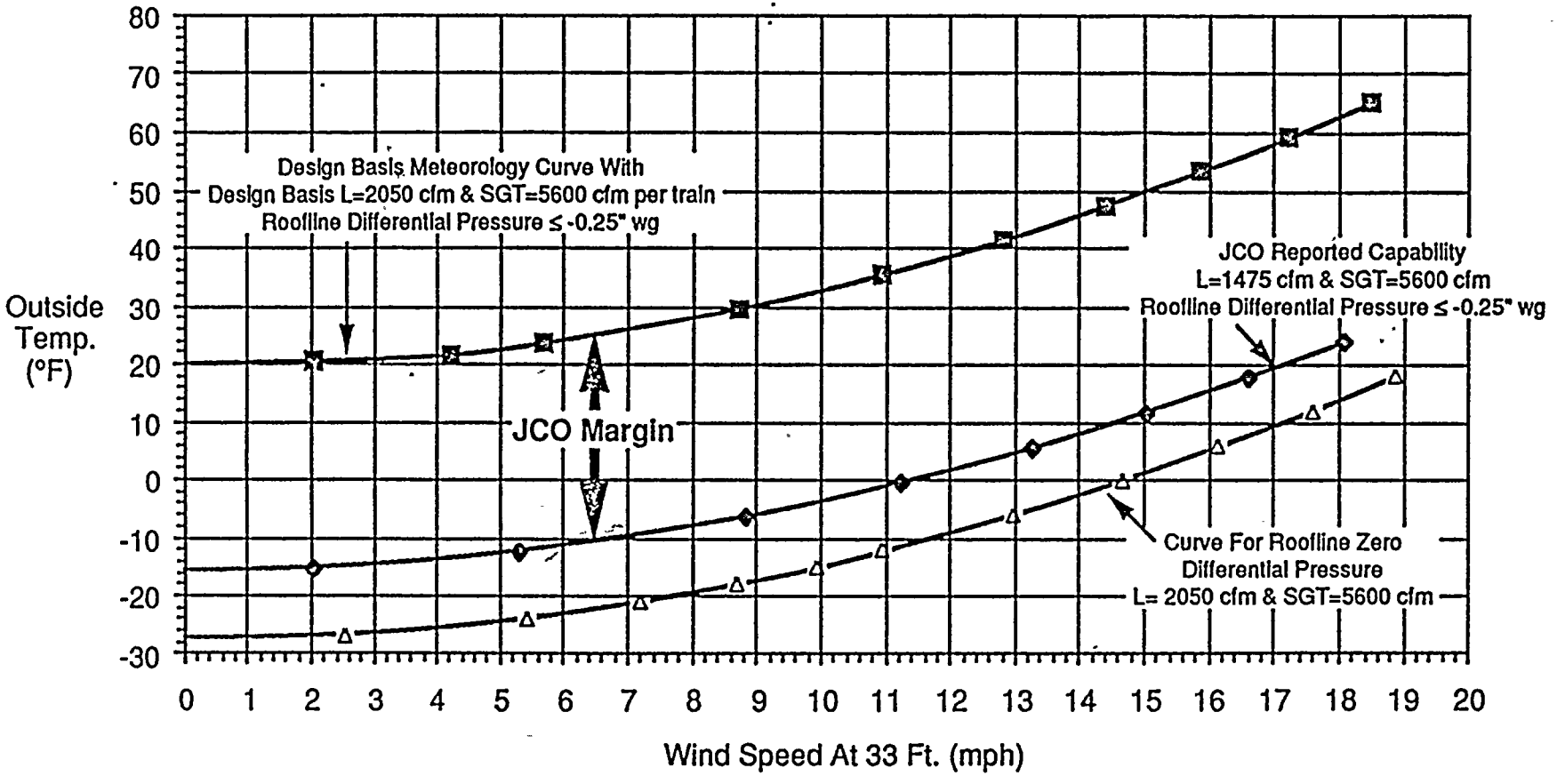
Very truly yours,

G. C. Sorensen, Manager
Regulatory Programs

AGH/bk
Attachment

cc: JB Martin - NRC RV
NS Reynolds - BCP&R
RB Samworth - NRC
DL Williams - BPA/399
NRC Site Inspector - 901A

Secondary Containment & Standby Gas Treatment System Design Basis



ATTACHMENT