

February 12, 2001

MEMORANDUM TO: File

FROM: Jack N. Donohew, Senior Project Manager, Section 2 */RA/*
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: RESPONSES TO QUESTIONS ON DEPARTURE FROM NUCLEATE
BOILING RATIO AMENDMENTS FOR PALO VERDE NUCLEAR
GENERATING STATION UNITS 1, 2, AND 3 (TAC NOS. MB0745,
MB0746, AND MB0747)

In its application of December 1, 2000, Arizona Public Service Company (the licensee) submitted a request for a license amendment to the Technical Specifications (TSs) for Palo Verde Nuclear Generating Station, Units 1, 2 and 3 (Palo Verde). In the letter, the licensee requested that the safety limit for the departure from nucleate boiling ratio (DNBR) in TS 2.1.1.1, and the allowable value for DNBR - low (function 15) in TS Table 3.3.1-1 be increased for operating cycle 11 and later operating cycles for the three units.

In the attached e-mail dated January 25, 2001, the licensee provided responses to clarify questions regarding the description of the proposed amendments to the TS changes that are in its application.

Docket No. STN 50-528, STN 50-529, and STN 50-530

Attachment: Email Dated January 26, 2001

February 12, 2001

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FROM: Jack N. Donohew, Senior Project Manager, Section 2
Project Directorate IV & Decommissioning */RA/*
Division of Licensing Project Management
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Attachment: Email Dated January 26, 2001

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NAME	JDonohew:lcc	MMcAllister	SDembek
DATE	02/12/2001	2/09/01	2/12/01

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EMAIL DATED JANUARY 25, 2000

From: "Proctor, James A(Z76277)" <JPROCTOR@apsc.com>
To: "JND@nrc.gov" <JND@nrc.gov>
Date: Thu, Jan 25, 2001 12:56 PM
Subject: Questions for 12/1/00 DNBR Safety Limit LAR

Jack,

Attached are the answers to the questions that you asked on the above subject. I have attached a "Word" and a "Adobe Acrobat" file of the answers, not knowing which format is easier for you to use. If you need anything more just let me know.

<<NRC_questions.doc>> <<NRC_questions.pdf>>

> James A. Proctor
> Regulatory Affairs (RA)
> Licensing
> MS 7636, Ext. X5730
> jproctor@apsc.com

CC: "Bauer, Scott A(Z98866)" <SBAUER@apsc.com>

Questions for application dated December 1, 2000, on the DNBR safety limit:

1. Are Units 1 and 3 currently in operating cycle 9, and Unit 2 in operating cycle 10?

YES

2. Are the refueling outages prior to operating cycle 11 currently scheduled as follows: Fall 2002 for Unit 1, Spring 2002 for Unit 2, and Spring 2003 for Units 3?

YES

3. It is stated in the middle paragraph on page 2 that uncertainties in inlet flow to the hot assembly and adjacent assemblies can be accounted for by (1) increasing the DNBR safety limit or (2) applying a thermal margin penalty to the COLSS and core protection calculators. Would the statistical combination of uncertainties (SCU) methods for both approach (1) and (2) be the approved "Modified Statistical Combination of Uncertainties" listed in TS 5.6.5.b.4?

The statistical combination of uncertainties (SCU) methods being addressed are contained in the combination of the two references quoted in TS 5.6.5.b.4, ["Modified Statistical Combination of Uncertainties"](#), and ["System 80™ Inlet Flow Distribution"](#).

4. In the May 26, 1994, evaluation, was not approach (2) taken and, in the proposed amendment, approach (1) is now being taken?

No. In May 94, with the new 1.30 limit, we took approach (1). When designs got more aggressive, starting w/U1C7 (spring 98'), not all of the uncertainties fit within the 1.30, so we started using approach (2). This Tech Spec amendment has the purpose of increasing uncertainties in the DNBR limit so we can go back to approach (1).

5. On the bottom of page 2, it is stated that the proposed change will simplify the reload process with respect to the DNBR safety limit because the safety limit and low DNBR RPS trip setpoint will be the same. Is this not true for the current TS values (i.e., 1.30 is specified for each one)? Then, how does the proposed amendment simplify the reload process?

The reference on the bottom of page 2 was attempting to convey that, "...the Safety Limit and **effective** Low DNBR RPS trip setpoint will be the same again..".

Approach (2) effectively raises the Low DNBR RPS trip setpoint to a value greater than the Tech Spec Safety Limit. This effective RPS trip setpoint is equal to the Safety Limit that would be calculated with approach (1). Thus, going back to approach (1) makes the effective trip setpoint and the Tech Spec Safety Limit the same and the reload process becomes more straight forward and less confusing.

6. Do you want the amendments to be implemented within 30 days of the date of issuance, or to be implemented prior to the restart from the outage for operating cycle 11?

We would like the amendment to become effective 60 days after issuance.