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 RECIP. NAME      RECIPIENT AFFILIATION  
 DENTON, H.R.      Office of Nuclear Reactor Regulation, Director  
 STOLZ, J.F.      Operating Reactors Branch 4

SUBJECT: Forwards response to NRC 850605 request for addl info re  
 Generic Ltr 81-22, "Natural Circulation Cooldown" & training  
 program to prevent or mitigate reactor vessel voiding.  
 Simulator does not model upper head voiding at present.

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 TITLE: OR Submittal: Natural Circ Cooldown GL 81-21 Multiplant Action B-66

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July 11, 1985

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

Attention: Mr. J. F. Stolz, Chief  
Operating Reactors Branch No. 4

Subject: Oconee Nuclear Station  
Docket Nos. 50-269, -270, -287

Dear Sir:


By letter dated June 5, 1985, the NRC provided to Duke a Safety Evaluation Report concerning Generic Letter 81-21, "Natural Circulation Cooldown", and Duke's assessment of the Oconee Nuclear Station's procedures and training program to deal with natural circulation cooldown events which result in the formation of a steam bubble in the upper head region of the reactor vessel. Within the SER, the NRC Staff concluded that for Oconee Nuclear Station Duke can perform a natural circulation cooldown to Decay Heat Removal System actuation in approximately seven hours without void formation.

Furthermore, the NRC requested that Duke provide a description of its training program that deals with the prevention or mitigation of reactor vessel voiding. Specifically, the NRC requested that Duke confirms and discusses the following items about its training program.

1. The training program addresses how voiding occurs and its consequences;
2. The program discusses the signs which indicate that voiding is occurring;
3. The program covers the procedures that prevent and mitigate voiding;
4. The program discusses the St. Lucie Unit 1 event of June 11, 1980, and
5. As part of the training, there is proper simulator modelling of upper head voiding.

Please find attached (Attachment 1) Duke's response to the five items listed above.

Very truly yours,



Hal B. Tucker

MAH:slb

Attachment

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Mr. Harold R. Denton, Director  
July 11, 1985  
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cc: Dr. J. Nelson Grace, Regional Administrator  
U. S. Nuclear Regulatory Commission  
Region II  
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Mr. J. C. Bryant  
NRC Resident Inspector  
Oconee Nuclear Station

Ms. Helen Nicolaras  
Office of Nuclear Reactor Regulation  
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Washington, D. C. 20555

Attachment 1  
Duke Power Company  
Oconee Nuclear Station  
Responses to NRC Items Concerning Natural Circulation Cooldown

1. The training program addresses how voiding occurs and its consequences.

Response: The training program addresses how voiding occurs and its consequences. The cause of voiding -- flashing of saturated liquid in the reactor vessel head or the hot leg U-bends under low flow conditions -- is discussed. The need to remove the void in order to enable RCS pressure control and allow further depressurization is covered.

2. The program discusses signs which indicate that voiding is occurring.

Response: The training program discusses signs of voiding, i.e., an abrupt halt to depressurization and/or large fluctuations in pressurizer level. Guidance is also provided for detecting a void if the presence of one is suspected.

3. The program covers the procedures that prevent and mitigate voiding.

Response: The training program discusses continuous venting of the reactor vessel head to prevent voiding during a natural circulation cooldown. Void mitigation by repressurization, venting, and reactor coolant pump restart is addressed.

4. The program discusses the St. Lucie Unit 1 event of June 11, 1980.

Response: Training on the St. Lucie Unit 1 event was conducted in 1980 and 1981 in response to SOER 81-4. Continuous training on this specific event is not conducted, but the lessons learned are addressed in existing lesson plans which cover head voids and natural circulation.

5. As a part of the training, there is proper simulator modelling of upper head voiding.

Response: The Oconee simulator does not model upper head voiding at this time. A new RCS model which would reproduce reactor vessel head voiding phenomena is being pursued. The simulator does incorporate a reactor vessel high point vent model which allows proper use of the Emergency Operating Procedure for training in natural circulation cooldown.