Mr. Oliver D. Kingsley, Jr.
President, TVA Nuclear and
Chief Nuclear Officer
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

January 14, 1997

SUBJECT: CORRECTION TO REQUEST FOR ADDITIONAL INFORMATION - TECHNICAL SPECIFICATION CHANGE REQUEST 96-01 ON CONVERSION TO COGEMA FUEL - SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2 (TAC NOS. M95144 AND M95145)

Dear Mr. Kingsley:

The staff issued the subject request for additional information on January 8, 1997. Because of a clerical error, parts of questions 32 and 33 were inadvertently omitted. Please insert the enclosed replacement pages 4 and 5 in place of the pages issued in our January 8 letter. I apologize for any inconvenience.

Please contact me at (301) 415-2010 if you have any questions.

Sincerely,

Original signed by

Ronald W. Hernan, Senior Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-327 and 50-328

Enclosure: Request for Additional Information - corrected pages 4 and 5.

cc w/enclosure: See next page

Distribution:

Docket File	PUBLIC	SQN Rdg. File	S. Varga
J. Zwolinski	OGC	ACRS	E. Merschoff, RII
C. Jackson	M. Shannon, RII		

DF01

DOCUMENT NAME: G:\SQN\95144.COR
TO GET a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	PDII-4/PM	PDII-4/LA	PDII-4/D		
NAME	RHernan	BClayton	FHebdon		
DATE	1/13/97	1/14/97	1/14/97		

OFFICIAL RECORD COPY

170057

Mr. Oliver D. Kingsley, Jr.
Tennessee Valley Authority

cc:
Mr. O. J. Zeringue, Sr. Vice President
Nuclear Operations
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Mr. Mark O. Medford, Vice President
Engineering & Technical Services
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Mr. R. J. Adney, Site Vice President
Sequoyah Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Soddy Daisy, TN 37379

General Counsel
Tennessee Valley Authority
ET 10H
400 West Summit Hill Drive
Knoxville, TN 37902

Mr. Raul R. Baron, General Manager
Nuclear Assurance and Licensing
Tennessee Valley Authority
4J Blue Ridge
1101 Market Street
Chattanooga, TN 37402-2801

Mr. Pedro Salas, Manager
Licensing and Industry Affairs
Tennessee Valley Authority
4J Blue Ridge
1101 Market Street
Chattanooga, TN 37402-2801

Mr. Ralph H. Shell, Manager
Licensing and Industry Affairs
Sequoyah Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Soddy Daisy, TN 37379

SEQUOYAH NUCLEAR PLANT

Mr. J. T. Herron, Plant Manager
Sequoyah Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Soddy Daisy, TN 37379

Regional Administrator
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW., Suite 2900
Atlanta, GA 30323

Mr. Melvin C. Shannon
Senior Resident Inspector
Sequoyah Nuclear Plant
U.S. Nuclear Regulatory Commission
2600 Igou Ferry Road
Soddy Daisy, TN 37379

Mr. Michael H. Mobley, Director
Division of Radiological Health
3rd Floor, L and C Annex
401 Church Street
Nashville, TN 37243-1532

County Executive
Hamilton County Courthouse
Chattanooga, TN 37402-2801

not been approved for mixed core applications. Provide an appropriate penalty to the limiting rod that will bound the misapplication of the critical heat flux correlation. Additionally, the analysis provided does not include the Westinghouse standard fuel in the mixed core penalty. Provide a justification why this is not accounted for.

27. Describe background information and the bases for those studies related to the Trojan Plant which concluded that a 3% transition core DNBR penalty should be applied to the Mark-BW when it is being inserted into a Westinghouse standard core with respect to the hydraulic compatibility of the Mark-BW fuel design with the Westinghouse standard design. Identify the similarity or difference in relation to the transition core DNBR penalty between the Sequoyah and Trojan reloads.

28. Provide the final conservatively bounding mixed core configuration for the SQN mixed core DNBR analysis and the transition penalty based on assuming that the center hot assembly is either a single Mark-BW fuel assembly in a core of the VANTAGE 5H or a single VANTAGE 5H in a Mark-BW core. Also, provide the result of the DNBR analysis using plant- and cycle-specific core loading configuration and the same limiting power distribution input in the above analyses. Show that the VANTAGE 5H to Mark-BW design peak difference will offset any transition core effects on the VANTAGE 5H and provide the description of the retained thermal margin in relation to the transition core penalty.

29. Provide clarification of the limited use of Westinghouse standard reinserts in a SQN transition core application and provide justification that the transition penalty will bound the SQN application.

30. Provide the bases for obtaining 2% of an increase in lift force for the limiting transition core configuration (one VANTAGE 5H in a Mark-BW core). Also, provide the data for lateral crossflow velocities for the mixed core configuration and an acceptable criterion for lateral crossflow.

31. Form loss coefficients for the fuel subcomponents were determined using the measured pressure drops. A LYNXT hydraulic model using those form loss coefficients showed that the total pressure drop of the Westinghouse VANTAGE 5H design is approximately 4% higher than that of the Mark-BW and that the Westinghouse standard fuel assembly is approximately 5.5% lower in the pressure drop than the current Mark-BW. Provide the detailed analysis with respect to the overall impact on the mixed core DNBR analysis based on these 4% and 5.5% pressure drops. Also, describe how the Figure 3.2 is generated and its application to the mixed core DNBR calculation if flow is much greater than 383,000 gpm.

32. The horizontal seismic and LOCA structural loads were calculated for the mixed core for Mark-BW fuel and Westinghouse Standard fuel. Why was Westinghouse V-5H not used? Additionally, explain how the mixed core calculation was performed to assure conservative results.

33. Is a full core analysis performed for the combined LOCA/safe shutdown earthquake (SSE) loads for mixed core applications? Compare the critical loads (crushing loads) for the three types of fuel that will be in the reactor and describe how the results are affected by the differences.

34. The methodology approved for the mixed core structural analysis is contained in BAW-10133. There is no reference to this methodology in the submittal. Please verify that this methodology was used.

35. On p. 8-7, the stated design criteria (with a reference to the Standard Review Plan [SRP]) for the LOCA combined with the SSE does not include control rod insertability; however, the SRP does require control rod insertability for this event. Correct the criteria and verify that control rod insertability is maintained for the combined loads.

36. The submittal states that the target burnups for SQN are 62,000 MWD/mtU for the peak rod; however, the safety evaluation for Mark-BW fuel only approves the fuel up to burnups of 60,000 MWD/mtU for the peak rod. Verify that the peak burnups will not exceed approved values and describe how each of the other limitations contained in the Safety Evaluation for BAW-10172 (Section 6.0 Conclusions) are met.