



Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381

APR 08 1996

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

Gentlemen:

In the Matter of) Docket No. 50-390
Tennessee Valley Authority)

WATTS BAR NUCLEAR PLANT (WBN) - REQUEST FOR ADDITIONAL INFORMATION
PERTAINING TO A PETITION PURSUANT TO 10 CFR 2.206 (TAC M94673)

The purpose of this letter is to respond to NRC's letter dated March 7, 1996, regarding a citizen's petition filed with NRC pursuant to 10 CFR 2.206. NRC's letter requested that TVA address each of the issues raised in the petition. TVA has reviewed the petition, which consisted of two letters to NRC Chairman Shirley Ann Jackson, dated January 25, 1996, and January 30, 1996, and provides in the Enclosure to this letter its response to the several issues raised by the petitioner.

If you should have any questions, please contact P. L. Pace at (423) 365-1824.

Sincerely,

D. V. Kehoe
Nuclear Assurance
and Licensing Manager

Enclosure

cc: See page 2

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Enclosure

cc (Enclosure):

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ENCLOSURE
RESPONSE TO ISSUES FROM 10 CFR 2.206 PETITION

Issue 1 - Fourth paragraph of Page 1 of the petitioner's letter dated January 25, 1996

Statement from petition:

"It appears the NRC staff was not fully aware of commitments and actual licensee compliance of said commitments when the NRC issued the Fuel Load and Low Power License up to 5% power on November 9, 1995. Whether this lack of understanding resulted from a lack of adherence to NRC procedures or misinformation provided by TVA or a combination of both is unclear."

Response:

From an overall review of the petition, the petitioner's main concern appears to center around whether WBN is committed to conform to Regulatory Guide (RG) 4.15, "Quality Assurance for Radiological Monitoring Programs," and the American National Standards Institute (ANSI) standard, N13.10-1974, "Specification and Performance of On-Site Instrumentation for Continuously Monitoring Radioactivity in Effluents" endorsed by RG 4.15. The petitioner's claim that TVA misled NRC would appear to be in regard to the status of TVA's compliance with RG 4.15 and ANSI N13.10-1974. This assertion is completely groundless. TVA has never provided misleading information about its commitments regarding the Radiation Monitoring System (RMS). The issue of conformance to RG 4.15 and ANSI N13.10-1974 is discussed in detail in response to what TVA has identified as petitioner's Issue 8 and Issue 9. TVA's response to Issue 8 and Issue 9 makes it clear that WBN has never committed to the requirements of the RG and ANSI Standard, and describes in full that the RMS has been designed, tested, and inspected to conform to the requirements applicable to WBN.

Issue 2 - Second paragraph of Page 2 of the petitioner's letter dated January 25, 1996

Statement from petition:

"The fact that Mr. Ebnetter acknowledges open issues in the radiation monitoring system on November 3, 1995 when TVA requested the operating license and now, further asks for a "supplement to the TVA Request for Operating License dated November 3, 1995", causes one to question the conclusion drawn by NRC staff in SSER-16."

Response:

The petitioner's perception of events is in error and in no way draws into question the NRC's conclusion as stated in Supplemental Safety Evaluation Report (SSER) 16, issued September 1995. NRC concludes in Section 11.5.2 of SSER 16 that the RMS meets applicable regulatory requirements. The fact that NRC later asks that TVA provide additional information to supplement its November 3, 1995, fuel load certification letter does not nullify or call into question its earlier determination with regard to the RMS. It is common practice for NRC to seek additional information and status updates from license applicants and licensees. For example, with regard to the RMS, there was an issue regarding training of key personnel on the operation of the RMS which was identified during an NRC inspection which ended November 4, 1995. In the discussion of this item in Inspection Report 390/95-74, NRC observed that TVA would complete the required training prior to initial criticality. The completion of this training was noted in an inspection that ended on January 13, 1996, and was documented by NRC in Inspection Report 390/95-80. Thus, this "open issue" was noted and closed as part of the normal licensing process prior to initial criticality, which occurred on January 18, 1996.

NRC's letter dated January 12, 1996, requested TVA to provide a final assessment of the RMS. As a result of that request, TVA conducted an additional review which integrated the corrective actions related to construction findings, preoperational test results, and issues associated with current operational experience (i.e., since the RMS system was turned over to Operations). This information was provided to NRC in a letter dated January 22, 1996, and was supplemented by TVA's letter dated January 29, 1996. These letters confirmed that the RMS conformed to applicable regulatory requirements and commitments.

TVA has fully responded to all NRC requests for information and inspection inquiries associated with the RMS. This information was carefully considered by TVA and provided to NRC on a timely basis.

Issue 3 - Sixth paragraph of Page 2 of the petitioner's letter dated January 25, 1996

Statement from petition:

"The SSER concludes the process and effluent radiological monitoring and sampling system for Watts Bar complies with the Federal Regulations and conforms with the applicable guidelines. Yet, the NRC staff appears not to be aware of the criteria used to license Watts Bar, of the commitments of the Watts Bar license nor compliance to those commitments, and has so stated in conversation over the last three months."

Response:

As stated in the response to Issue 1, TVA's response to Issue 8 and Issue 9 addresses in detail the issue of TVA's commitments regarding the WBN RMS. Included in this discussion are details contained in TVA letters to NRC as well as excerpts from NRC Inspection Reports which establish that the commitments for the WBN RMS are well documented and that system design and installation comply with those commitments.

Issue 4 - Seventh paragraph of Page 2 of the petitioner's letter dated January 25, 1996

Statement from petition:

"The weekly conference calls have consistently included three major players in the Watts Bar licensing process. The point at the center of discussion is: the alleger claims the primary calibrations and testing for said monitors have not been performed as required by RG 4.15 and ANSI 13.10."

Issue 5 - Eighth paragraph of Page 2 of the petitioner's letter dated January 25, 1996

Statement from petition:

"NRC staff repeated and currently declare they do not know if the licensee is committed to or has complied with RG 4.15."

Response to Issue 4 and Issue 5:

TVA's response to Issue 8 and Issue 9 addresses conformance to RG 4.15 and ANSI N13.10-1974 insofar as the RMS is concerned.

Issue 6 - Ninth paragraph of Page 2 of the petitioner's letter dated January 25, 1996

Statement from petition:

"The Federal Regulation and Standard Review Plan clearly give guidance as to what the commitments should be. The SSER appears to portray accurately, the criteria to which the licensee has comported. Why then at this late date do we have the Regional Administrator requesting a Supplement to a license concerning a topic that appears to have met all necessary requirements in the September SSER?"

Issue 7 - Second paragraph of Page 6 of the petitioner's letter dated January 25, 1996

Statement from petition:

"The Office of Nuclear Reactor Regulation (NRR) issues the Safety Evaluation Report (NUREG-0847) and supplements (SSERs) as its principal licensing basis documents for Watts Bar. Essentially the SSER represents an accurate portrayal of the licensee's commitments as the NRC understands them. Within Watts Bar SSER 16, The staff did portray what appears to be an accurate portrayal of the licensee's commitment. The question of whether or not those commitments were actually met presently remains open."

Response to Issue 6 and Issue 7:

These two issues are addressed in the response to the petitioner's Issue 2 above.

Issue 8 - Eighth paragraph of Page 6 of the petitioner's letter dated January 25, 1996

Statement from petition:

"The SSER does discuss in detail deviations from the ranges proposed in RG 1.97. Staff has found these deviations acceptable. There appears to be an absence of language suggesting any deviation and/or alternative from the criteria presented in RG 4.15."

Issue 9 - First paragraph of Page 8 of the petitioner's letter dated January 25, 1996

Statement from petition:

"ANSI 13.10 was not comported with:

1. The licensee did not perform a primary calibration using gas and liquid sources to verify detector geometry relationships.
2. The licensee did not perform an In Situ plate out study to estimate line losses of particulate material nor
3. The licensee did not verify Isokinetic conditions existing at the sample nozzle.

The above information challenges the validity of the SSER 16 statement 'The staff concludes that the process and effluent radiological monitoring and sampling system conform to the Guidelines...4.15...'"

Response to Issue 8 and Issue 9:

From these issues, the petitioner suggests that the WBN RMS must comply with the guidelines defined in RG 4.15, and the ANSI standard endorsed by RG 4.15, N13.10-1974. The petitioner supports this conclusion by citing sections of the Code of Federal Regulations (CFR), NUREG 0800 Standard Review Plan (SRP), and the Safety Evaluation Reports (SERs) for WBN. However, the fact is that RGs are issued to describe methods acceptable to NRC for implementing specific parts of the Commission's regulations. Methods different from those defined in the RG may be utilized by a license applicant to address SRP topics.

TVA has not made a commitment to comply with RG 4.15. TVA's position on compliance with RG 4.15 was stated in TVA's July 21, 1995, letter to NRC. That letter addresses NRC's questions regarding section 11.4 of the Final Safety Analysis Report (FSAR) and the letter states:

"Watts Bar is not committed to RG 4.15, Revision 1, however, the radiation monitoring program generally agrees with and satisfies the intent of RG 4.15, Revision 1 except for specific calibration techniques and frequencies...."

In stating that the system "agrees with and satisfies the intent of RG 4.15," TVA considers that the methodology used in the design of the RMS accomplishes the purpose of the RG with the exceptions noted regarding calibration techniques and frequencies. While the methods used by TVA may not be those specifically defined in the RG for each application, they are acceptable by the fact that they meet the RG's overall safety objectives.

NRC's letter dated January 12, 1996, requested that the RGs and Industry Standards for which commitments had been made for the RMS be identified. TVA provided the requested information in letters dated January 22, 1996, and January 29, 1996. The RGs identified in those letters were:

- 1.21, Revision 1 - "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents From Light-Water-Cooled Nuclear Power Plants."
- 1.45, Revision 0 - "Reactor Coolant Pressure Boundary Leakage Detection Systems."
- 1.97, Revision 2 - "Instrumentation for Light-Water-Cooled Nuclear Power Plant to Assess Plant and Environs Conditions During and Following an Accident."

The following Industry Standards were identified as having been used as reference guidance in designing and evaluating the radiation monitoring system:

- ANS N13.1-1969 - "Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities."
- ANSI/ANS-HPSSC-6.8.1-1981, "Location and Design Criteria for Area Radiation Monitoring Systems for Light Water Nuclear Plants."

Although TVA takes no credit for NRC reviews of system design, for the sake of completeness in addressing the petitioner's issues, the results of NRC Inspection Report 390/96-01 provides some useful insights. This special inspection was initiated on January 22, 1996, and reviewed the RMS for agreement with the guidance in RGs 1.21, 1.97, and 4.15; and ANSI standards N13.1-1969 and N13.10-1974. NRC acknowledged in Inspection Report 390/96-01 that no commitment had been made by WBN for compliance with ANSI standard N13.10-1974, the standard endorsed by RG 4.15. Further, no significant issues regarding compliance with applicable RGs resulted from this inspection.

The three specific points made by the petitioner concerning the RMS focus on monitor calibration, sample line plate-out, and the verification of isokinetic sampling. Each of these points was addressed in TVA's letters to NRC dated January 22, 1996, and January 29, 1996. Listed as follows are the sections of the TVA letters that pertain to the points made by the petitioner:

Key Points	January 22, 1996 Section of Letter	January 29, 1996 Section of Letter
Monitor Calibration	Enclosure 4, Quality Assurance Assessment of the RMSP; Enclosure 5, RMS Engineering Assessment; Enclosure 6, Preoperational Test Results and Deficiencies	Enclosure 1 - issue identified as: Define and quantify the key issues associated with the RMS; Describe the results of assessments performed by TVA's Nuclear Assurance organization on the Radiation Monitoring Special Program (RMSP); State the impact of the activities performed under the RMSP for those monitors which were not included within the scope of the RMSP. Enclosure 2 - issue identified as: Describe the methods through which conformance to the requirements of RG 1.21 is assured.
Sample line plate-out	Enclosure 2, Radiation Monitoring Special Program (RMSP) Closure	Enclosure 1 - issue identified as: Define and quantify the key issues associated with the RMS.
Isokinetic sampling	Enclosure 5, RMS Engineering Assessment	Enclosure 1 - issue identified as: Define and quantify the key issues associated with the RMS.

Once again for the sake of completeness, recent NRC inspections also addressed the points cited by the petitioner. The applicable sections of these reports are listed below along with the conclusions made by NRC:

Key Points	NRC Inspection Report (IR)	Conclusion Stated in IR
Monitor Calibration	Section 1.1 of IR 390/96-01	"The inspectors concluded that the primary calibrations performed on the monitor detectors were satisfactory to demonstrate that the monitors would perform their intended function and that the licensee met its commitments in this area."
Sample line plate-out	Section 1.3 of IR 390/96-01	"[T]he inspectors concluded that the licensee had met its commitments with regard to sample line loss determinations."
Isokinetic sampling	Section 4.5 of IR 390/95-65 (closure of NUREG 0737, item II.F.1.2.b)	"Based on the verification of the Unit 1 and Unit 2 plant vent isokinetic sampling equipment, completion of preoperational testing and verification of chemistry laboratory capabilities, this item was considered closed."

From the above it is clear that TVA has plainly described its RG and Industry Standard commitments associated with the WBN RMS.

Issue 10 - Third paragraph of Page 8 of the petitioner's letter dated January 25, 1996

Statement from petition:

"Those within the NRC who made those determinations were seemingly incorrect in their assessment. These allegations, indeed, should have been considered within the licensing process, as well as all allegations concerning Radiation Monitoring. Those making the determination appear have been unaware of SSER-16 or the following facts as stated by Mr. Ebnetter's Jan. 12, 1996 letter.

'The problems and schedules resulted in System 90 being the last of the major systems to be completed and turned over to the operating staff and there were several issues still open when TVA submitted the letter to NRC requesting the operating license.'"

Response:

This issue is addressed in the response to the petitioner's Issue 2 above.

Issue 11 - Fifth and sixth paragraphs of Page 8 of the petitioner's letter dated January 25, 1996

Statement from petition:

"Staff, in an attempt to defend the position that RG 4.15 and ANSI 13.10 were not pertinent sent me a July 21, 1995, Watts Bar FSAR 11 Document stating:

'Watts Bar is not committed to RG 4.15, Revision 1 however the radiation monitoring program generally agrees with and satisfies the intent of RG 4.15, Revision 1, except for specific calibration techniques and frequencies.'

(RG 4.15 Rev. 1 includes ANSI 13.10)

The wording of this FSAR supports the position concluded by the NRC in SSER 16. Watts Bar has complied and comported with the intent of RG 4.15. The fact that the SSER is absent any language indicating deviation and or acceptable alternative attests that Staff understood the Radiation Monitoring System to be in total compliance with RG 4.15, therefore inclusive of ANSI N13.10."

**Issue 12 - First paragraph of Page 9 of the petitioner's letter
dated January 25, 1996**

Statement from petition:

"Although both document clearly establish Watts Bar's claim to compliance of the regulatory guide Neither Document is accurate in its conclusion that the Radiation Monitoring system complies with the intent of 4.15 In reality the Watts Bar Radiation Monitoring system does not comport with RG 4.15 nor ANSI N13.10 as the facts above establish.

Further as an interesting aside in TVA's response to the Jan. 12. 1996 Stew Ebnetter letter, TVA states:

'RG 4.15 Rev. 1 (is) not discussed in FSAR or other regulatory documents.

Clearly, RG 4.15 is referenced and discussed in the above stated FSAR 11"

**Issue 13 - Second paragraph of Page 9 of the petitioner's letter
dated January 25, 1996**

Statement from petition:

"If the NRC chooses to make the case the utility mislead them, perhaps this could be a starting point."

Response to Issue 11, Issue 12, and Issue 13:

In concluding that TVA has somehow misled the NRC, the petitioner focuses on a statement contained in Enclosure 3 of TVA's letter dated January 22, 1996. As part of that letter, TVA included a table, the first column of which listed the RGs and Industry Standards which were considered by TVA's Engineering Assessment Review Team. This team was tasked with revising the design criteria, FSAR, or other design documents as necessary to correct any inconsistencies and bring the descriptions of the RMS into conformance with NRC regulations and industry practice. The second column in the table was titled "Basis for Conformance." The information placed in the second column indicated the key documents submitted to NRC which provided details of the methods used to conform to the listed RGs and Industry Standards. The statement made for RG 4.15 under "Basis for Conformance," was "not discussed in FSAR or other regulatory document." This is a correct statement. In fact, TVA's July 21, 1995, letter clearly states that WBN is not committed to RG 4.15. The petitioner goes on to mistakenly assume that the statement from TVA's July 21, 1995, letter (that WBN is not committed to RG 4.15) is part of Chapter 11 of the FSAR. This is not correct. The July 21, 1995, letter is in response to a request made by NRC for additional information related to Chapter 11 of the FSAR.

In order to fully examine this issue raised by the petitioner, TVA conducted a search of TVA submittals to NRC which mention in any way, RG 4.15 and were dated prior to the issuance of the low power license. Other than the documents previously discussed in this letter, the results of this review identified the following documents:

Date of Letter	Subject of Letter	Discussion of RG-4.15
November 30, 1994	Regulatory Guide 4.15	Referenced regarding confirmatory measurement samples.
January 3, 1991	Final Safety Analysis Report (FSAR) Chapter 12, Amendments 54 - 63	Referred to in a resume of a TVA manager.
July 27, 1983	Proposed modifications to the NRC draft of the Watts Bar Technical Specifications.	Statement in document indicates that procedures will be established using the guidance contained in RG 4.15.
September 15, 1982	Proposed modifications to the NRC draft of the Watts Bar Technical Specifications.	Identified that RG 4.15 would be used for guidance in relation to the Secondary Water Chemistry Program and the Quality Assurance Program for environmental monitoring.

The sole purpose of TVA's November 30, 1994, letter was to obtain radionuclide samples to facilitate inspection by NRC of certain areas of WBN's chemistry program. The limited reference to RG 4.15 in regard to test samples did not in any way commit TVA to the many guidelines contained in RG 4.15. TVA's January 3, 1991, letter contained a resume attachment which made reference to a manager's qualification and experience with regard to RG 4.15. The remaining two documents are dated prior to development of the WBN Radiation Monitoring Special Program, the program that defined the design basis for the RMS. In addition, these two documents refer to matters associated with the development of WBN's initial 1985 draft Technical Specifications. Since that time, TVA has completely redeveloped the WBN Technical Specifications in accordance with the improved Standard Technical Specifications, spelled out in NUREG 1431. Throughout the approval process, NRC was kept fully informed about the bases for TVA's Technical Specifications as they pertained to the RMS and other systems. This effort superseded the previously developed Technical Specifications and the two letters identified above. Accordingly, there is no basis for contention that TVA attempted to mislead NRC on this or any other matter.

**Issue 14 - Third paragraph of Page 9 of the petitioner's letter
dated January 25, 1996**

Statement from petition:

"Without establishing the fully documented trail (10 CFRs to ANSI standards) There are other guidelines and standards that have not been complied with:

- Neither RG 1.21 nor ANSI N13.1 have been comported with concerning Radiation Monitors."

Response:

This issue is addressed by TVA's response to Issue 8 and Issue 9.

**Issue 15 - Third paragraph of Page 9 of the petitioner's letter
dated January 25, 1996**

Statement from petition:

"There are serious concerns as to whether or not the MIC procedures have been followed since 1993."

Response:

The petitioner's statement regarding Microbiologically Induced Corrosion (MIC) procedures does not identify any specific problems. However, two recent procedural compliance MIC issues have been identified. The first issue concerned the frequency with which a non-oxidizing biocide was added to raw water systems. After a thorough evaluation of this issue TVA concluded that there was no impact on the raw water systems. This issue and other elements of the MIC program were reviewed by NRC as part of Inspection Report 390/96-02. Based on this inspection, NRC concluded that the MIC program met applicable regulatory requirements.

The second issue involved a situation where an effectiveness assessment of the MIC program was not completed within the required timeframe. A corrective action document was initiated to resolve the deficiency. Subsequently, the required action for development of the effectiveness report was completed and the deficiency was closed. While TVA views these deficiencies in a serious manner, they can in no way be construed as a basis for a serious concern about the effectiveness of the WBN MIC program.

Issue 16 - Fourth paragraph of Page 9 of the petitioner's letter
dated January 25, 1996

Statement from petition:

"Another area of concern was developed while reviewing the SSER's. There are numerous deviations, acceptable alternative or "good faith efforts" on the half of the licensee. By the virtual numbers of the deviations I have repeatedly questioned the Staff as to whether or not an overview review of said deviations had been performed. My concern is that with the multitude of deviations, often on the same issue, being granted over so many years, does anyone really know where this license stands in respect to the original position. (The list we have generated will be sent to you shortly)." [Note, that the list was provided in a letter to NRC from the petitioner dated January 30, 1996.]

Response:

It appears that some elements of the regulatory process are not fully understood by the petitioner. The petitioner implies that the design of the plant is not known because of the number of deviations. However, it is important to realize that Watts Bar was well into the design process at the time many regulations, RGs, and Industry Standards were being developed or finalized. As such, it became necessary in certain instances to conduct a detailed review of established design and provide a thorough justification for maintaining that design while meeting safety requirements. The deviation process was established to allow for NRC's full consideration of TVA's design alternatives, and TVA has full confidence that these deviations have been reviewed and properly evaluated by NRC.