

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:)
)
SOUTH CAROLINA ELECTRIC AND) Docket No. 50-395
GAS COMPANY)
)
(Virgil C. Summer Nuclear Station))

AFFIDAVIT OF WILLIAM G. KENNEDY REGARDING
INTERVENOR'S MOTION FOR ADMISSION OF NEW CONTENTION

1. I, William G. Kennedy, being duly sworn, state the following. I am an Senior Operational Safety Engineer in the Procedures and Test Review Branch, in the Office of Nuclear Reactor Regulation, U. S. Nuclear Regulatory Commission. A copy of my professional qualifications is attached.

2. The purpose of this affidavit is to address the matter raised in the Intervenor's February 24, 1982 motion for the admission of a new contention stemming from Board Notification (BN-82-7), dated January 24, 1982. That notification forwarded a copy of a trip report dated December 22, 1981 prepared by M.S. Medeiros regarding plant operating procedures and contained a preliminary Staff evaluation of that trip report. This affidavit provides a general discussion of the purpose, development and NRC review of plant operating procedures. The affidavit then discusses the Medeiros trip report and NRC Staff evaluation of

that report. Finally, the affidavit addresses the specific allegations contained in the proposed new contention raised in the Intervenor's February 24, 1982 motion.

3. Plant Operating Procedures. Operating procedures provide instructions to guide operators in the performance of their duties in the control room as well as the rest of the plant. The NRC requires applicants to have written and approved procedures and that the plant be operated in accordance with those procedures. See Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)," which endorses ANS N18.7-1976/ANS-3.2, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants." 10 CFR 50, Section 50.34 (b)(6)(iv) and (v) requires that the Final Safety Analysis Report contain the Applicant's plans for the conduct of normal operations and for coping with emergencies. The Staff reviews these plans, and, on an audit basis, reviews the resulting procedures.

4. Typically, procedures are initially written based on guidance from the system designers and previous operating experience of the Applicant's staff. As procedures are reviewed, used for training, and used in the plant, necessary changes are identified. As a result, it is necessary and desirable to upgrade the procedures periodically. The NRC requires that the

administration of procedures include instructions on the incorporation and review of changes to procedures.

5. The Final Safety Analysis Report (FSAR), Section 13.5, describes the methods the Applicant intends to use to develop and control procedures. The Staff reviews this description of the Applicant's plans but, before TMI, the Staff had not reviewed actual procedures as part of the FSAR review. They were part of the areas reviewed routinely by the Office of Inspection and Enforcement.

6. NRC Review. As a result of the TMI accident, a new Division of Human Factors Safety was established in the Office of Nuclear Reactor Regulation to address Human Factors concerns in the regulation of nuclear reactors. The Division of Human Factors Safety reviews Section 13.5 of the FSAR which contains the Applicant's plans for operating procedures. In accordance with the TMI Action Plan, NUREG-0660, "NRC Action Plan Developed as a Result of the TMI-2 Accident" and NUREG-0737, "Clarification of TMI Action Plan Requirements", the Staff is also conducting pilot monitoring reviews of selected emergency operating procedures of operating license applicants to obtain a "sense of the adequacy of the emergency procedures", (NUREG-0660, Task I.C.8. paragraph a on page I.C-7). This review process will be continued until technical guidelines based on reanalysis of

accidents and transients are found acceptable by the Staff. This pilot monitoring review was conducted on the selected procedures for the Summer station and is reported in the Staff's Safety Evaluation Report (SER), NUREG-0717 dated February, 1981. The Applicant submitted to the Staff the four selected emergency operating procedures incorporating Staff comments by letters dated November 14, 1980 and January 28, 1981. Both sets of procedures appear to have been served on the Intervenor.

7. The NRC Regional Inspectors also review procedures to ensure the Applicant is meeting their Final Safety Analysis Report commitments and regulatory requirements. This is done on an audit basis using Inspection and Enforcement Manual Chapters including: Operating Procedures, 42450B, and Emergency Procedures, 42452B. The first chapter confirms that the plant level operating procedures themselves are adequate to control safety related operations. The second chapter confirms that the emergency procedures are prepared to adequately control safety related functions in the event of system or component malfunction. The inspection using these chapters is performed as the plant prepares the necessary procedures. The first of these chapter inspections had been started but not been completed at the Summer station and the second had not been begun prior to Mr. Medeiros' visit. An inspection conducted on January 18-22, 1982 used these two chapters. The results of this inspection were reported in Region II Inspection Report No. 82-06, dated February

24, 1982. A copy of this report is attached to the separate affidavit of V. L. Brownlee filed in connection with the Intervenor's motion.

8. Medeiros Trip Report. The Office of Nuclear Regulatory Research includes a Division of Facility Operations which develops research and standards programs in the area of improving procedures used during plant operations. Mr. Medeiros, a staff member in the Human Factors Branch of that division, prepared a "Thinking Paper" outlining his perception of what was wrong with current procedures at plants and what should be done to improve them. The thinking paper was initially written approximately a year ago and has been revised several times. The Division of Human Factors Safety in the Office of Nuclear Reactor Regulation, has reviewed revisions of this paper and has had several concerns with his perceptions and recommended solutions. These concerns were discussed with Mr. Medeiros and others from the Office of Nuclear Regulatory Research.

9. For the stated purposes of scoping and directing the NRC's research program, Mr. Medeiros visited the Virgil C. Summer Nuclear Station on December 17 and 18, 1981 to gain first-hand knowledge of operating procedures preparation and use. The trip was described to the Resident Inspector and the plant management as a fact-finding trip, not a licensing review of procedures.

However, Mr. Medeiros' trip report, M.S. Medeiros to James Norberg and Raymond DiSalvo, dated December 22, 1981, included many of what he believed to be technical and Human Factors flaws in the procedures that he reviewed. These items were contained in Enclosures 1 and 2 to the trip report. Enclosure 3 of the trip report was a list of procedure deficiencies from his earlier thinking paper work of which an unspecified number were observed during his visit. Enclosure 4 is the latest revision of his thinking paper. Enclosures (3) and (4) were written prior to Mr. Medeiros' trip to the Summer station. In summary, it appears that Mr. Medeiros visited the Summer station to find support for some of the ideas in his thinking paper and believed he found a significant amount.

10. In response to the Medeiros trip report, the Office of Nuclear Reactor Regulation sent two senior reviewers to the Summer station to evaluate the validity of the comments in the trip report and evaluate their effect on the statements made in the SER. In addition, Region II sent two senior inspectors to conduct a review of the comments in the trip report and to conduct an inspection of the operating procedures using Inspection and Enforcement Manual Chapters 42450B and 42452B. The results of these inspections are contained in the trip report memorandum from William G. Kennedy and David L. Wigginton to Hugh L. Thompson, Jr., dated February 1, 1982 (copy attached) and in Region II Inspection Report No. 82-06, dated February 24, 1982.

A copy of the Region II report is attached to the separate affidavit of V. L. Brownlee filed in connection with the Intervenor's motion. These reports collectively state that only a small number of comments from the Medeiros trip report were considered valid, that the valid comments did not invalidate the statements in the SER, and that the Applicant committed to address the valid comments and revise the procedures as necessary. A followup inspection is planned by Region II on March 22, 1982.

11. Proposed New Contention. The Intervenor's proposed contention asserts that the NRC Staff cannot provide reasonable assurance that the Summer plant can be operated without endangering the public health and safety because the normal and emergency operating procedures are so badly done that they invite error. The NRC Staff provides assurance that the public health and safety is not endangered in the area of normal and emergency operating procedures through careful reviews to ensure the Applicant's plans meet NRC requirements in this area and by followup inspections by the Resident Inspector and Regional Inspectors to confirm that the Applicant meets the requirements. The Staff's review and conclusions on the Applicant's program for operating procedures was performed in accordance with the NRC Standard Review Plan and the TMI Action Plan (NUREG-0660 and NUREG-0737), and is discussed in Sections 13.5 and 22 of the SER.

In response to the Medeiros trip report, two senior reviewers from the Office of Nuclear Reactor Regulation were sent to the plant to determine if the conclusions reported in the SER, were still valid. This plant review consisted of (1) evaluating each specific comment made by Mr. Medeiros using as criteria NUREG-0737 and NUREG-0799, "Draft Criteria for Preparation of Emergency Operating Procedures," (2) comparing the plant's emergency operating procedures with the Westinghouse revised technical guidelines, dated July 15, 1980, and (3) verifying the Applicant's resolution of the Westinghouse comments on the emergency operating procedures. This review revealed that (1) there were a small number of Mr. Medeiros' comments that should be resolved but the emergency operating procedures were acceptable, (2) the technical guidelines had been incorporated into the plant procedures, and (3) one comment resulting from the vendor's review of the procedures needed to be resolved. Based on this review, the Staff determined that the conclusions in the SER were still valid. This review was discussed in the trip report memorandum from William G. Kennedy and David L. Wigginton to Hugh L. Thompson, Jr., dated February 1, 1982 (copy attached).

12. The Staff also reviews procedures at the plant using Inspection and Enforcement Manual Chapters 42450B and 42452B. This review had not been completed prior to Mr. Medeiros' visit but was performed on January 18-22, 1982. That review identified several deficiencies in the operating procedures. The substance

of that review is discussed in the separate affidavit of V. L. Brownlee. The report identifies open items which the Applicant has committed to resolve. A followup inspection is scheduled by Region II for March 22, 1982.

13. The proposed contention asserts that the Applicant has demonstrated through its operating procedures that it places economic concerns before safety. The Medeiros trip report provides no basis for the suggestion that the Applicant places economic considerations above safety in the development of operating procedures nor did the visit by staff members of the Office of Nuclear Reactor Regulation detect any basis for the assertion.

14. The proposed contention further asserts that the emergency operating procedures do not meet the requirements of NUREG-0737. The requirements for emergency operating procedures in NUREG-0737 are contained in I.C.1 - Guidance for the Evaluation and Development of Procedures for Transients and Accident. The discussion that follows divides the requirements into two areas: the technical content of the requirements and the schedule for meeting the requirements. The discussion of the technical content identifies that the initial analyses conducted for guideline and procedure development contained insufficient information to assess the extent to which multiple failures are considered. NUREG-0737 identifies that owners' group or vendor

submittals may be referenced as appropriate to support the necessary reanalysis and, that, pending Staff approval of the revised analysis and guidelines, the pilot monitoring described in Item I.C.8 of NUREG-0660 would be continued. The SER discusses the review of Item I.C.1 and I.C.8 and concludes that the emergency operating procedures meet the requirements of NUREG-0737 for operation up to 100% of rated power.

15. NUREG-0737 also provides implementation dates which specifies that the revised analysis and guidelines should be completed and submitted to the NRC for review by January 1, 1981 and that applicants for operating licenses to be issued after January 1, 1982, should implement revised procedures prior to operation. The 1982 date was an estimate of the time necessary for Staff review and plant implementation based on applicants meeting the 1981 date for the reanalysis. The document permits licensees and/or owners' groups who will have difficulty in attaining the January 1, 1981 due date to submit a comprehensive program plan and justification for all delays and problems to be submitted in lieu of the guidelines. The Westinghouse Owners' Group met with the NRC Staff on February 20, 1981 to discuss their program. There have been further discussions since then. The plan called for their program to be submitted to the Staff in two parts. The first part was received in November, 1981 and has been reviewed. The second part of their program is expected to be submitted to the Staff in June, 1982. The resulting changes

to the emergency operating procedures are expected to be in place before full power operation of the Summer station based on current schedules. However, as described in the SER, the current emergency operating procedures are acceptable for operation.

16. Finally, the contention asserts that the NRC staff is relying on procedure changes early in the plant's life to provide assurance of the public health and safety whereas the TMI accident proved that bad operating procedures under normal and emergency conditions could cause a severe accident early in plant life. As a result of the work done on procedures in accordance with the TMI Action Plan, the Staff believes that the improvements to the emergency operating procedures will enhance plant safety. The Staff also expects that further improvements will be made to the Summer emergency operating procedures as a result of the finally approved Westinghouse Owners' Group technical guidelines. However, as discussed above, the current emergency operating procedures are acceptable for operation.

William G. Kennedy
William G. Kennedy

Subscribed and sworn to before

me this 12th day of March, 1982

Margie J. Allen

Notary Public

My Commission Expires: July 1, 1982

Professional Qualifications

William George Kennedy

My name is William George Kennedy. I am employed as a Senior Operational Safety Engineer in the Procedures and Test Review Branch, Division of Human Factors Safety, U. S. Nuclear Regulatory Commission, Washington, DC. I have held this position since October 1980. The Procedures and Test Review Branch is responsible for evaluating applicants' plans for the development and control of operating and maintenance procedures as well as for evaluating the technical and Human Factors aspects of selected emergency operating procedures. Prior to my present position, I was employed as a Computer Scientist by the Information Systems Staff in the Communications Sciences Division of the Naval Research Laboratory, Washington, DC.

I attended the United States Naval Academy, Annapolis, Maryland, receiving a BS degree with a major in Mathematics in 1972 and the Naval Postgraduate School in Monterey, California, receiving a MS degree in Computer Science in 1973. I also attended the Naval Nuclear Propulsion School in Vallejo, California and the National/Naval Nuclear Prototype Training Unit in Idaho Falls, Idaho, becoming qualified to supervise operation of a Naval nuclear propulsion plant in 1974. I then supervised operation of a submarine nuclear propulsion plant from 1974 until 1978.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

ATTACHMENT

February 1, 1982

Docket No. 50-395

MEMORANDUM FOR: Hugh L. Thompson, Jr., Acting Director
Division of Human Factors Safety

THRU:

LSJ Dennis L. Ziemann, Chief
Procedures and Test Review Branch
Division of Human Factors Safety

HBC H. Brent Clayton, Acting Section Leader
Section A - Procedures
Procedures and Test Review Branch
Division of Human Factors Safety

FROM:

William G. Kennedy
Procedures and Test Review Branch
Division of Human Factors Safety

David L. Wigginton
Operating Reactors Branch #1
Division of Licensing

SUBJECT:

RE-EVALUATION OF THE VIRGIL C. SUMMER
EMERGENCY OPERATING PROCEDURES

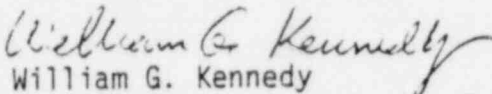
On January 18 and 19, 1982, we visited the Virgil C. Summer Nuclear Station and reviewed their current Emergency Operating Procedures (EOPs). The purpose of this trip was to evaluate whether the Safety Evaluation Report (SER) needed to be changed in view of comments made by Mr. M. S. Medeiros in his trip report of December 22, 1981. Our review consisted of (1) evaluating each specific comment made by Mr. M. S. Medeiros in his trip report, (2) comparing the current EOPs to the NSSS vendor's (Westinghouse) revised technical guidelines of July 15, 1980, and (3) the resolution of the Westinghouse comments on their EOPs.

The evaluation of the trip report's comments resulted in approximately six items that needed correction but did not render the EOPs unacceptable. These items were identified to I&E inspectors for resolution. The comments were discussed with the plant staff and they agreed to make the necessary changes. The comparison of the EOPs with the technical guidelines yielded no comments. The review of the resolution of Westinghouse comments resulted in one item where the plant staff disagreed with the vendor. The plant staff agreed to resolve the difference with Westinghouse. We find this commitment acceptable. I&E will address these and additional comments in the Resident Inspector's Inspection Report 50-395/82-06.

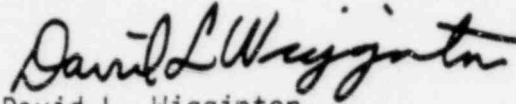
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February 1, 1982

Based on this re-review, we conclude that although there are minor deficiencies in the EOPs, the statements made in our Safety Evaluation Report remain valid. Specifically, we find the Emergency Operating Procedures are acceptable for operation at full power. It should be noted that the long-term program (TMI Action Plan Item I.C.9) will result in revisions to their EOPs based on NRC approved technical guidelines and a generic writer's guide to be developed by the industry which include human factors considerations.



William G. Kennedy
Procedures and Test Review Branch
Division of Human Factors Safety



David L. Wigginton
Operating Reactors Branch #1
Division of Licensing

cc:

J. Skolds, IE
W. Kane, NRR
V. Brownlee, IE Reg. II
K. Woodward, SCE & GC
J. Youngblood, NRR