

308.
UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges
Morton B. Margulies, Chairman
Gustave A. Linenberger, Jr.
Dr. Oscar H. Paris

DOCKETED
USNRC

'85 AUG 22 A9:34

In the Matter of
GEORGIA POWER COMPANY, et al.
(Vogtle Electric Generating
Plant, Units 1 and 2)

Docket Nos.

OFFICE OF SECRETARY
DOCKETING & SERVICE
50-424-OL
50-425-OL
SEARCH

August 21, 1985

SERVED AUG 22 1985

MEMORANDUM AND ORDER

(RULING ON SUMMARY DISPOSITION OF CONTENTION 10.3 -
CABLE IN MULTICONDUCTOR CONFIGURATION?)

Summary

In this contention, Joint Intervenors Campaign for a Prosperous Georgia and Georgians Against Nuclear Energy challenge the environmental qualification of multiconductor cable used in the Vogtle Electric Generating Plant (VEGP) based upon the results of generic cable testing performed by the Sandia National Laboratories (Sandia). On July 1, 1985, Applicants filed a motion for summary disposition of this contention in accordance with 10 CFR 2.749. The NRC Staff (Staff) filed a response on July 26, 1985 in support of this motion. No response was received from Joint Intervenors. For the reasons discussed below, we grant the motion.

Discussion

In admitting Contention 10.3, the Board stated it as follows:

Again, Petitioners [now Joint Intervenors] cite a Sandia study (not identified) for the proposition that in tests of EPR [ethylene propylene rubber] cable material, multiconductor configurations performed "substantially worse" than single conductor configurations and that qualification testing employing only single conductors may not be representative of multiconductor performance. Petitioners further allege that the results of this report have not been considered in Applicants' testing program.

Georgia Power Company, et al. (Vogtle Electric Generating Plant, Units 1 and 2), LBP-84-35, 20 NRC 86, 904 (1984).

With respect to the granting of a motion for summary disposition on the pleadings, 10 CFR 2.749(d) provides as follows:

The presiding officer shall render the decision sought if the filings in the proceeding, depositions, answers to interrogatories, and admissions on file, together with the statements of the parties and the affidavits, if any, show that there is no genuine issue as to material fact and that the moving party is entitled to a decision as a matter of law.

Applicants' motion is accompanied by a listing of fifteen alleged material facts as to which no genuine issue exists to be heard plus a summary of the contention (Statement 1) and a conclusion as to why Applicants are entitled to a decision (Statement 17). The motion is also accompanied by an affidavit in support of the above-mentioned facts. Applicants' affiant has professional qualifications adequate to support his address of the subject. Applicants' statements, where material facts are concerned, include citations to affidavit paragraphs that support these statements; the statements follow:

1. 'Joint Intervenor's' Contention 10.3 challenges the environmental qualification of multiconductor cable used at the VEGP based upon the results of testing performed by Sandia.
2. In the nuclear industry, single conductor configurations have commonly been used in tests performed to establish the environmental qualification of multiconductor cables. Because a multiconductor cable generally has jacketing material or additional insulation or both surrounding the insulated single conductors that comprise it, which should provide additional protection from adverse environmental conditions not available to a single conductor, performing qualification testing on a single conductor taken from a sample of the particular multiconductor under scrutiny is considered to be a more conservative methodology than testing the multiconductor itself. Affidavit of Joel Kitchens ("Kitchens Affidavit") at ¶ 3.
3. Regulatory Guide 1.131 endorses IEEE Standard 383-1974, which in Table 1 specifically authorizes the use of single conductor configurations in type testing for qualification purposes of multiconductor cables. Regulatory Guide 1.131, "Qualification Tests of Electrical Cables, Field Splices, and Connections for Light-Water-Cooled Nuclear Power Plants"; IEEE Standard 383-1974, "IEEE Standard for Type Testing of Class IE Electric Cables, Field Splices, and Connections for Nuclear Power Generating Stations"; Kitchens Affidavit at ¶ 3.
4. Sandia has conducted two studies in which the performance of multiconductor cable configurations under loss-of-coolant accident ("LOCA") conditions was compared to that of single conductor configurations obtained by disassembling samples of the multiconductor cables. The first study was reported in L. D. Bustard, The Effect of

LOCA Simulation Procedures on Ethylene-Propylene Rubber's Mechanical and Electrical Properties, SAND 83-1258, NUREG/CR-3538, October 1983 ("the first Sandia report"), and the second study in L. D. Bustard, The Effect of LOCA Simulation Procedures on Cross-Linked Polyolefin Cable's Performance, SAND 83-2406, NUREG/CR-3588, April 1984 ("the second Sandia report"). Kitchens Affidavit at ¶¶ 4, 9.

5. In the first study, Sandia subjected five types of commercially available multiconductor cables to simulated LOCA conditions. Id. at ¶ 4. With one exception, all five of the multiconductor cable products tested had chlorosulfonated polyethylene (CSPE) (also known as Hypalon) outer jackets. The one exception was a three conductor cable manufactured by Anaconda Wire and Cable Company that had EPR insulation on the individual conductors and an outer thermoplastic jacket of chlorinated polyethylene (CPE). Id. at ¶ 5.

6. Only the multiconductor cable having a thermoplastic chlorinated polyethylene outer jacket suffered greater degradation in a multiconductor configuration than in a single conductor configuration. Id. at ¶ 6.

7. The Sandia researchers surmised that the greater degradation shown by the multiconductor cable having a CPE outer jacket resulted from an interaction between that jacket and the EPR insulation around each of the single conductors comprising the multiconductor cable. Id. at ¶ 7.

8. One of the chief purposes of the second Sandia study was to test experimentally whether qualification testing of single conductors was more severe to, equal to, or less severe than testing of multiconductor cables. Id. at ¶ 11.

9. In that study three commercially available

multiconductor cable assemblies were subject to simulated LOCA conditions. All three of the multiconductor cable products had cross-linked polyethylene insulation and thermosetting Hypalon or neoprene outer jackets. Similar to the prior study, for two of the cable products tested the tests were performed both on the multiconductor cable products and on single conductors obtained by disassembling samples of the multiconductor cables. Id. at ¶ 10.

10. With respect to the two cable products tested in both multiconductor and single conductor configurations in the second Sandia study, the electrical properties retained by those cable products following exposure to simulated LOCA conditions "did not depend on whether single conductor or multiconductor testing was performed." Id. at ¶ 11.

11. Of the eight multiconductor cable products tested in both Sandia studies, only the multiconductor cable manufactured by Anaconda Wire and Cable Company that had conductors with EPR insulation and a thermoplastic CPE outer jacket suffered greater degradation in a multiconductor configuration. Id. at ¶ 12.

12. None of the multiconductors tested that had Hypalon or neoprene outer jackets, including two other multiconductor cables manufactured by Anaconda, suffered greater degradation in a multiconductor configuration. Id. at ¶¶ 12-13.

13. Only cables having a thermoplastic CPE jacket are likely to suffer greater degradation when tested in a multiconductor configuration rather than in a single conductor configuration. Id. at ¶ 13.

14. The Applicants have not used any multiconductor cable at VEGP having a thermoplastic CPE jacket. Id.

15. All electric cable utilized at VEGP has either a chlorosulfonated polyethylene (Hypalon) or a polychloroprene (neoprene) outer jacket. Id.

16. Multiconductor cable products having outer jackets of these materials were tested in the Sandia studies and showed no greater degradation following exposure to simulated LOCA conditions when tested in a multiconductor configuration than when tested in the corresponding single conductor configuration. Id. at ¶¶ 5, 10, 13.

17. The use of single conductor samples in the qualification testing of the multiconductor cable products used at VEGP is adequate to establish the environmental qualification of those multiconductors.

The Staff's response supported Applicants' motion. Relying upon its own affiant, Staff concluded that Applicants' use of single conductor cable testing for the environmental qualification of multiconductor cables to be used at VEGP is acceptable and that the motion for summary disposition of Contention 10.3 should be granted. It did so on the basis that the Sandia tests called into question the testing of single conductor cables in place of multiconductor cables only where such multiconductor configurations are sheathed in jackets of thermoplastic CPE. Applicants stated that they will employ only multiconductor cables sheathed in Hypalon or neoprene at VEGP. Since Applicants' environmental qualification program has not been reviewed, the Staff has been unable to confirm Applicants' statement, but intends to do so during its review of Applicants' program.

Joint Intervenors filed no response to Applicants' motion. 10 CFR 2.749(a) provides in part:

All material facts set forth in the statement requested to be served by the moving party will be deemed to be admitted unless controverted by the statement required to be served by the opposing party.

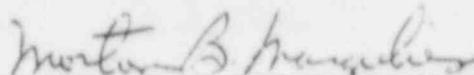
In reaching our finding for Applicants, we do not rely upon admissions that result from Joint Intervenor's failure to file a response, as provided by 10 CFR 2.749(a). We have carefully considered all of Applicants' and Staff's submittals along with the contents of the two cited Sandia reports. We find that there is no genuine issue as to any material fact relating to Contention 10.3. The material facts are as recited by Applicants and Staff. The Sandia tests upon which the contention is premised do not call into question the testing of single conductor cables of the type that Applicants represent will be used in VEGP, a matter we have no basis to doubt. Staff intends to conduct a review of this, which should provide further confirmation.

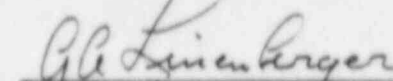
Based upon our review of the undisputed material facts of record, we find that Joint Intervenor's Contention 10.3 is without merit.

Order

Based upon all of the foregoing, the Board grants Applicants' motion for summary disposition of Contention 10.3 and hereby orders that the contention is dismissed.

THE ATOMIC SAFETY AND LICENSING BOARD


Morton B. Margulies, Chairman
ADMINISTRATIVE LAW JUDGE


Gustave A. Linenberger, Jr., Member
ADMINISTRATIVE JUDGE


Dr. Oscar H. Paris, Member
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland
this 21st day of August, 1985.