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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANSON

In the Matter of)
)
THE CLEVELAND ELECTRIC)
ILLUMINATING COMPANY, ET AL.)
)
(Perry Nuclear Power Plant,)
Units 1 and 2))

Docket Nos. 50-440
50-441

APPLICANTS' MOTION FOR SUMMARY
DISPOSITION OF ISSUE 16

The Cleveland Electric Illuminating Company, et al.
("Applicants") hereby move the Atomic Safety and Licensing Board,
(the "Board") pursuant to 10 C.F.R. § 2.749, for summary
disposition in Applicants' favor of Issue 16. As grounds for
their motion, Applicants state that there is no genuine issue of
material fact to be heard with respect to Issue 16, and that
Applicants are entitled to a decision in their favor on this
contention as a matter of law.

This motion is supported by:

1. Applicants' Statement of Material Facts as to Which
There is No Genuine Issue to be Heard on Issue 16;
2. Affidavit of John C. Kammeyer, dated January 28, 1985
("Kammeyer Affidavit");
3. Affidavit of Edward C. Christiansen, dated February 1,
1985 ("Christiansen Affidavit");

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4. Affidavit of Gary R. Leidich, dated February 1, 1985 ("Leidich Affidavit");
5. Affidavit of Charles D. Wood III, dated January 31, 1985 ("Wood Affidavit").

I. BACKGROUND

Issue 16 was admitted as a contention in this proceeding in the Board's "Memorandum and Order (New Contention on Diesel Generators)," December 23, 1983 ("Memorandum and Order"). Ohio Citizens for Responsible Energy ("OCRE") is the lead intervenor on this issue. As admitted by the Board^{1/}, Issue 16 states:

Applicant has not demonstrated that it can reliably generate emergency on-site power by relying on four Transamerica Delaval diesel generators, two for each of its Perry units.

Memorandum and Order at 1. The Memorandum and Order indicate that the bases for the contention are:

1. Cracks in the crankshafts in the Transamerica Delaval, Inc. ("TDI") diesel generators installed at the Shoreham Nuclear Power Station; and
2. Deficiencies reported via Deficiency Analysis Reports ("DARs") in the Perry Nuclear Power Plant ("PNPP") TDI diesel generators, some of

^{1/} The Board simplified the original contention submitted by OCRE concerning diesel generators. Memorandum and Order at 1.

which raised design, as well as manufacturing concerns.

Briefs on NRC Regulations and Guidance Applicable to Issue 16 were submitted by OCRE (January 1, 1984), the NRC staff (January 20, 1984), and Applicants (January 27, 1984). Reply Briefs were thereafter filed by OCRE (February 3, 1984) and Applicants (February 3, 1984).

Discovery on this issue was closed on June 1, 1984.^{2/} It included OCRE's Tenth Set of Interrogatories to Applicants, January 6, 1984, to which Applicants responded on February 8, 1984;^{3/} OCRE's Eleventh Set of Interrogatories to Applicants, dated February 17, 1984 (served February 18, 1984), to which Applicants responded on March 8, 1984; Applicants' Interrogatories and Request for Production of Documents to OCRE (Fifth Set), dated March 9, 1984, to which OCRE responded on May 14, 1984 (served May 15, 1984); and OCRE's Twelfth Set of Interrogatories to Applicants, dated May 14, 1984 (served May 15, 1984) to which Applicants responded on June 11, 1984. Applicants filed supplemental responses to the aforementioned interrogatories on January 25, 1985.

^{2/} Discovery was extended beyond the original cut-off date of April 6, 1984 by "Board Memorandum and Order (Discovery About Transamerica Delaval Diesels)," May 8, 1984.

^{3/} Applicants' response to OCRE Interrogatory No. 10-2 was subsequently updated by letter of March 9, 1984 from Michael A. Swiger, Applicants' counsel, to Susan Hiatt, OCRE representative.

On January 7, 1985, OCRE filed a Motion to Reopen Discovery on Issue 16 along with its Fourteenth Set of Interrogatories to Applicants. Applicants voluntarily agreed to respond to the new set of interrogatories and agreed to provide the majority of the documents requested. See "Applicants' Answer to OCRE's Motion to Reopen Discovery on Issue No. 16," January 17, 1985. Applicants responded to these interrogatories on January 22, 1985.

II. ARGUMENT

A. Standards for Summary Disposition

The admission of a contention for adjudication, under the standards of 10 C.F.R. § 2.714, is not an appraisal of the merits of a contention, but merely a determination that it meets the criteria of specificity, asserted basis and relevance. A hearing on an admitted contention, however, is not inevitable. Licensing boards are authorized to decide an admitted contention on its merits in advance of trial on the basis of pleadings filed. "Any party to a proceeding may move, with or without supporting affidavits, for a decision by the presiding officer in the party's favor as to all or any part of the matters involved in the proceeding." 10 C.F.R. § 2.749(a). The

standard embodied in the regulation is that:

[t]he 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 any material fact and that the moving party is entitled to a decision as a matter of law.

10 C.F.R. § 2.749(d).

The Commission and its adjudicatory boards have encouraged the use of the summary disposition process so that evidentiary hearing time is not unnecessarily devoted to issues where the proponent of a contention cannot establish that a genuine issue exists. Statement of Policy on Conduct of Licensing Proceedings, CLI-81-8, 13 N.R.C. 452, 457 (1981); see also Houston Lighting and Power Company (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 N.R.C. 542, 550 (1980) ("[T]he Section 2.749 summary disposition procedures provide in reality as well as in theory, an efficacious means of avoiding unnecessary and possible time-consuming hearings on demonstrably insubstantial issues.")

The standards governing summary disposition motions in an NRC proceeding are quite similar to the standards applied under Rule 56 of the Federal Rules of Civil Procedure. Alabama Power Company (Joseph M. Farley Nuclear Plant, Units 1 and 2), ALAB-182, 7 A.E.C. 210, 217 (1974); Tennessee Valley Authority (Hartsville Nuclear Plant, Units 1A, 2A, 1B and 2B), ALAB-554, 10 N.R.C. 15, 20 n. 17 (1979). Where, as here, a motion for

summary disposition is properly supported pursuant to the Commission's Rules of Practice, a party opposing the motion may not rest upon the mere allegations or denials of its answers. Rather, an opposing party must set forth specific facts showing that there is a genuine issue of fact. 10 C.F.R. § 2.749(b). A party cannot avoid summary disposition on the basis of guesses or suspicions, or on the hope that at the hearing the movant's evidence may be discredited or that "something may turn up." Gulf States Utilities Company (River Bend Station, Units 1 and 2), LBP-75-10, 1 N.R.C. 246, 248 (1975).

B. There is No Genuine Issue of Material
Fact With Respect to OCRE Issue 16

Applying the aforementioned standards to the facts of this case, it is clear that this motion for summary disposition of Issue 16 should be granted.

OCRE has stated that the basis for its belief in the unreliability of the PNPP diesel generators is the fact that they were manufactured by TDI. "OCRE Response to Applicants' Interrogatories and Request for Production of Documents to Intervenor Ohio Citizens for Responsible Energy (Fifth Set)," May 14, 1984, Interrogatory No. 5. It further asserts that "the inherent unreliability of the TDI [diesel generators is] due to poor design and manufacturing quality", id. No. 9 at 5, and that "quality assurance at TDI is severely deficient." Id. No. 5 at 3. OCRE cites failures experienced by TDI engines in

marine, stationary, and nuclear service to support its contention. Id. No. 6. It also raises the deficiencies reported under 10 C.F.R. Parts 21 and 50.55(e) as well as the "poor or totally lacking QA described in the NRs [PNPP Non-Conformance Reports], audit reports, and surveillance reports of Applicants." Id. at 4.

It was to address operational and regulatory issues relating to TDI diesels that the TDI Diesel Generator Owners Group was formed by Cleveland Electric Illuminating Company ("CEI") and eleven other U.S. utilities. Kammeyer Affidavit, ¶ 4. The Program Plan established by this Owners Group provides an in-depth assessment of the adequacy of the TDI diesel generators to perform their intended safety-related function through a combination of design reviews, quality revalidations, engine tests, component inspections and the establishment of maintenance requirements. Id., ¶¶ 6, 9. It is unprecedented in its approach and analytical detail, in many instances incorporating analyses beyond the detailed engineering effort which originally went into the design of the diesel generator components. Id., ¶ 31. It is likewise unprecedented in its scope, spanning over a year's time and drawing upon the input from a variety of high quality technical consultants and involving more than a hundred engineers and technicians. Id., ¶¶ 6, 13.

The Owners Group Program provided an independent design verification of important diesel engine components' attributes.

Id., ¶ 11. All technical evaluations were performed independent of TDI. Id. The Owners Group program of component inspections and testing of diesel generator equipment at each plant assured that independence from TDI's Quality Assurance program was also achieved. Id., ¶ 12.

The NRC staff has evaluated the Owners Group Program and concluded that it incorporates the essential elements needed to resolve the outstanding concerns relating to the reliability of the TDI diesel generators for nuclear service, and to ensure that the TDI diesel generators comply with GDC 1 and GDC 17. See "Safety Evaluation Report-Transamerica Delaval, Inc. Diesel Generator Owners Group Program Plan," August 13, 1984; Kammeyer Affidavit, ¶ 7. These essential elements include: (1) resolution of known generic problems (Phase I); (2) systematic design review and quality revalidation of all components important to reliability and operability of the engines (Phase II); (3) appropriate engine inspections and testing as identified by the results of Phase I and II; and (4) appropriate maintenance and surveillance programs as indicated by the results of Phase I and II. Id.

The Phase I effort has already been completed. Sixteen components with problems potentially generic to TDI diesel generators have been reviewed and the specific design and/or manufacturing concerns identified have been resolved through analyses, testing, documentation reviews, and recommendations to the owners regarding preventative maintenance. Kammeyer

Affidavit, ¶ 13; and see Affidavit of Charles D. Wood III ("Wood Affidavit"), ¶¶ 12-182. The crankshaft problem, identified by the Board as a basis for this contention, was among the components subjected to a detailed design review. Kammeyer Affidavit, ¶ 10. The Owners Group concluded that the crankshafts on the DSRV-16-4 engines (the model used at PNPP) are adequate for their intended service and meet applicable standards. Id.; Wood Affidavit, ¶¶ 161-172.

It is important to note the wide array of experience, as well as basic technical data, which went into the database governing selection of the sixteen components which received a detailed design review in the Phase I effort. TDI engine/component operational experiences were documented using input from both nuclear (i.e., 10 C.F.R. Part 21 Reports, Licensing Event Reports, etc.) and non-nuclear sources (both marine and stationary diesel engines), as well as information obtained as a result of feedback from the utilities' own inspection and testing conducted as part of the Owners Group Program. Kammeyer Affidavit, ¶¶ 8, 15.4/ While TDI drawings and certain TDI information were used as input to the Phase I design review, the actual technical evaluations were performed independent of TDI. Id., ¶ 11. The methodology for

4/ This same comprehensive database was utilized in the selection of components for Phase II (Design Review/Quality Revalidation ("DR/QR") of Selected Engine Components) of the Owners Group Program. Kammeyer Affidavit, ¶¶ 14-27.

verification of the critical attributes was established and the sixteen components were evaluated by analyses performed by the Owners Group, not by a review of the TDI analysis. Id. The Phase I effort, therefore, provided an independent verification of all critical design aspects of each of the sixteen components. Id. The Owners Group Program achieved independence from TDI's Quality Assurance program by inspection and testing of the diesel generator equipment installed at each plant, including PNPP. Id., ¶ 12. The inspections recommended by the Owners Group provided a specific means of verifying critical aspects of each component. Id. Results and conclusions of the Owners Group evaluation of the sixteen Phase I components are contained in thirty-six reports which have been submitted to the NRC staff for review.^{5/} Id., ¶ 13. All but three of these reports were submitted by August, 1984. Christiansen Affidavit, ¶ 4. Two were submitted in November of 1984, and the last one in December of 1984. Id.

CEI employed an independent engineering consultant, Southwest Research Institute ("SwRI"), to verify the applicability of each Owners Group report to the specific component in place at PNPP. Christiansen Affidavit ¶ 6. SwRI reviewed, evaluated, and independently verified the analysis, results, and conclusions of each of the Phase I studies. Wood

^{5/} Two components, the cylinder block and cylinder liner, were combined in one report. Kammeyer Affidavit, ¶ 13.

Affidavit, ¶¶ 7, 9. SwRI's overall conclusion with regard to the Phase I effort was that the Owners Group reports were accurate in their evaluation of the potentially generic problems. See Wood Affidavit, ¶¶ 12-182. It concluded that each of the sixteen Phase I components in place at PNPP is acceptable for nuclear service if the applicable Owners Group maintenance and inspection recommendations, as well as those of SwRI, are followed. Id., ¶¶ 181-182.

Phase II of the Owners Group Program, the DR/QR effort, examined from the standpoint of both design and quality attributes the components of each owner's engine which were not reviewed in Phase I. Kammeyer Affidavit, ¶¶ 14-27. The Phase II components had no history of potentially generic problems. Christiansen Affidavit, ¶ 7. Components were selected for design review and/or quality revalidation on the basis of past nuclear and non-nuclear engine experience, site-specific experience, etc., as entered into the comprehensive database discussed supra., as well as other factors. Kammeyer Affidavit, ¶¶ 14,17. The critical nature of the component, based upon the effect its failure would have on engine performance, was also analyzed. Id., ¶ 16. Design review and/or quality revalidation requirements for each component were reflected in specific task descriptions which were then implemented by the Owners Group technical staff and site personnel. Id. ¶ 22; Christiansen Affidavit, ¶¶ 8-10.

The Phase II DR/OR effort has been completed for the components identified at PNPP.^{6/} The PNPP DR/OR Report was transmitted to the NRC on January 17, 1985. Christiansen Affidavit, ¶ 8. Disassembly, inspection, repair and reassembly of the diesel generators was conducted by a special task force of PNPP personnel under the supervision of PNPP Site Quality Control.^{7/} Id., ¶¶ 10-11. Only two notable problems were encountered during this revalidation effort, and both have been corrected. Id., ¶¶ 14, 15.

The third element of the Owners Group Program involves an enhanced engine testing program coupled with specific component inspections. Kammeyer Affidavit, ¶ 28. Prior to plant licensing and operation, the Unit 1 TDI diesel generators will undergo a full pre-operational test program in accordance with NRC Reg. Guide 1.108, Rev. 1, "Periodic Testing of Diesel Generator Units Used as Onsite Electrical Power Systems at Nuclear Power Plants," August, 1977, (as described in the PNPP FSAR, Table 1.8), and IEEE-387-1977, "Criteria for Diesel Generator Units Applied as Standby Power Supplies for Nuclear Power Generating Stations." Leidich Affidavit, ¶ 8. The tests include diesel generator auxiliary systems tests for electrical

6/ A select group of components will be re-inspected, per Owners Group recommendations, after one-hundred hours of operation of each engine. Affidavit of Gary R. Leidich ("Leidich Affidavit"), ¶ 21.

7/ Approximately forty individuals are assigned full-time to the diesel generator revalidation effort. Id., ¶ 10.

and pneumatic controls, diesel generator control circuit functional and start tests, diesel generator load tests, diesel generator load acceptance tests, and diesel generator reliability tests. Id., ¶¶ 13-19. PNPP will perform twenty additional start-and-load tests, in addition to the minimum of sixty-nine required by Reg. Guide 1.108. Id., ¶ 18.

Additional tests, including those recommended by the Owners Group, will also be performed. Id., ¶¶ 8, 12. Among these will be a torsionograph test to confirm the adequacy of the crankshaft,^{8/} and an engine vibration survey of both engines at full load. Id., ¶ 20.

PNPP is implementing all applicable recommendations resulting from Phases I and II of the Owners Group Program and is currently incorporating the recommendations obtained from the independent review conducted by SwRI into its engine program as well. Christiansen Affidavit, ¶¶ 16-17. "Ongoing" maintenance recommendations obtained from the Owners Group and SwRI will supplement those of TDI as well as standard PNPP procedures on a day-to-day basis. Id. PNPP has worked within the guidelines established by the Owners Group to ensure that each important diesel engine component is, and will continue to

^{8/} This will provide the "independent verification" which OCRE seeks of the maximum torsional stress on the PNPP standby diesel generator crankshafts. See OCRE Response to Applicants' Interrogatories and Request for Production of Documents to Intervenor Ohio Citizens For Responsible Energy (Fifth Set), dated May 14, 1984, Interrogatory No. 17(a) at 9.

be, adequate throughout the life of the TDI diesel generators. Id., ¶ 19. PNPP will continue to procure parts for the TDI diesels by procurement methods which mandate that all NRC quality assurance ("QA") requirements be met during their fabrication. Id. ¶ 22. Surveillance programs presently in place at PNPP will continue to monitor any problems with TDI-supplied equipment. Id., ¶¶ 23-24. These programs include those established pursuant to 10 C.F.R. Part 21 and 10 C.F.R. Part 50.55(e). Id., ¶ 23. Other methods of feedback such as INPO reporting and TDI Service Information Memos will also continue to be used to supplement PNPP's own surveillance program. Id., ¶ 24.

One of the bases for OCRE's contention was the number of DAR's written against TDI equipment at PNPP which raised design or manufacturing problems. Memorandum and Order at 3-5. Twenty-eight DAR's were written with respect to the TDI diesels (of which three related to non-TDI items). Twenty-two of these were deemed reportable to the NRC. Except for the most recent one, corrective work on all of the DAR's has been completed and most have already been closed out by the NRC staff. Id., ¶ 26. The fact that these deficiencies were discovered and corrected shows that Applicants' surveillance program is working. As this Board has stated, "A good, working quality assurance program identifies deficiencies for correction. If deficiencies are reported the system is working." Cleveland Electric Illuminating Company (Perry Nuclear Power Plant, Units 1 and 2), LBP-24, 15 N.R.C. 175, 211 (1981).

Clearly, the Owners Group Program, and Applicants' active participation therein, establishes "that OCRE's concerns have been resolved by appropriate action, in compliance with 10 C.F.R., Part 50, Appendix B, [and] General Design Criterion 17." Memorandum and Order at 2. The program has addressed all of the critical component problems/failures identified by OCRE in its answers to Applicants' interrogatories, including the crankshaft, OCRE Response to Applicants' Interrogatories and Request for Production of Documents to Intervenor Ohio Citizens for Responsible Energy (Fifth Set), dated May 14, 1984, Interrogatory Nos. 8, 14, 16, 19; cylinder heads, id., Interrogatory Nos. 13, 23; connecting rod bearing shells, id., Interrogatory Nos. 14, 18, 19; turbocharger, id., Interrogatory No. 14; piston skirts, id., Interrogatory Nos. 14, 20, 21, 22; cylinder liners, id., Interrogatory No. 24; and the cylinder block, id., Interrogatory No. 25. See Kammeyer Affidavit, ¶ 8; Wood Affidavit, ¶¶ 46-59, 67-79, 119-152.

The Owners Group effort incorporated a review of data on problems experienced with TDI diesels in both nuclear and non-nuclear service. Kammeyer Affidavit, ¶¶ 8, 14, 17. Thus, problems such as those experienced in marine service, OCRE Response to Interrogatories, Interrogatory Nos. 6, 14, 24, 25 and 38, have been considered and are reflected in the components chosen for design review and/or quality revalidation. Id.

In the Owners Group Program, an independent design/review quality revalidation of the engines/components was conducted. Id., ¶ 11. The Program did not rely on TDI's QA program or solely on its technical input. Id., ¶¶ 11-12. Contrary to OCRE's assertion, there was no "uncritical reliance on TDI supplied information." OCRE Response to Interrogatories, Interrogatory No. 38(a) at 18 (emphasis added). The Owners Group conducted an independent evaluation of components, not a review of TDI analyses. Id., ¶ 11. Neither did "[u]se of the lead engine concept ... [ignore] ... QA deficiencies ... by assuming that all V-16 engines are equivalent to (and use the same parts as) Grand Gulf." OCRE Response to Interrogatories, Interrogatory No. 38(a) at 18. The component inspections and testing of the diesel generators at each site, performed by Owners Group representatives and site-personnel, assure independence from TDI's QA program and provide a means of verifying critical aspects of components actually installed in the diesels at PNPP and other plants. Id., ¶ 12.

The TDI Diesel Generator Owners Group Program provides assurance of the reliability of the TDI diesel generators in place at PNPP to perform their intended safety-related functions. Id., ¶ 6. Applicants have been active participants in this program and are implementing each of the applicable recommendations generated by this extensive effort as well as those resulting from the evaluations conducted by SwRI. Christiansen Affidavit, ¶¶ 4-5, 7-19. The extensive

pre-operational testing which has already been conducted on the TDI DSRV-16-4 engines at Comanche Peak (in excess of 100 hours) and Catawba (which alone has over 1,600 hours of operation), as well as that to be conducted at PNPP, provides additional assurance of the capabilities of the TDI DSRV-16-4 engines in place at PNPP. Leidich Affidavit, ¶¶ 7-21.

III. CONCLUSION

Because there is no genuine issue of material fact to be heard on Issue 16, and because Applicants have demonstrated that the bases of OCRE's contention concerning the reliability of the TDI diesel generators in place at PNPP are insubstantial, Applicants respectfully request that their Motion for Summary Disposition of Issue 16 be granted.

Respectfully submitted,

SHAW, PITTMAN POTTS & TROWBRIDGE

By: Rose Ann Sullivan
Jay E. Silberg, P.C.
Rose Ann Sullivan

Counsel for Applicants

1800 M Street, N.W.
Washington, D.C. 20036
(202) 822-1000

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