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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF SECRETARY
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BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
CAROLINA POWER & LIGHT COMPANY)	
AND NORTH CAROLINA EASTERN)	Docket Nos. 50-400 OL
MUNICIPAL POWER AGENCY)	50-401 OL
)	
(Shearon Harris Nuclear Power)	
Plant, Units 1 and 2))	

APPLICANTS' MOTION FOR SUMMARY DISPOSITION OF
JOINT INTERVENORS' CONTENTION IV
(THERMOLUMINESCENT DOSIMETERS)

Carolina Power & Light Company and North Carolina Eastern Municipal Power Agency ("Applicants") hereby move the Atomic Safety and Licensing Board, pursuant to 10 C.F.R. §2.749, for summary disposition in Applicants' favor of Joint Contention IV. For the reasons set forth herein, Applicants respectfully submit that there is no genuine issue as to any fact material to Joint Contention IV, and that Applicants are entitled to a decision in their favor on Joint Contention IV as a matter of law.

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This motion is supported by:

1. "Applicants' Memorandum of Law in Support of Motions for Summary Disposition on Intervenor Eddleman's Contentions 64(f), 75, 80 and 83/84," dated September 1, 1983;
2. "Applicants' Statement of Material Facts As To Which There Is No Genuine Issue To Be Heard On Joint Contention IV"; and
3. "Affidavit of Stephen A. Browne" and Attachment A attached thereto.

I. STATEMENT OF FACTS AND PROCEDURAL BACKGROUND

Joint Contention IV alleges that the thermoluminescent dosimeters (TLDs) which Applicants intend to use as the dosimeter of record to monitor occupational radiation exposure are inadequate to assure worker safety and health and that Applicants should be required to use portable pressurized ionization monitors to corroborate the results of TLD readings. The wording of Joint Contention IV accepted by the Board is stated as follows:

Applicants intend to rely on thermoluminescent dosimeters (TLDs) as the dosimeter of record to monitor occupational radiation exposure. Because of TLD inaccuracies and their lack of real-time monitoring capability, these devices are inadequate to assure worker safety and health. Applicants should be required to use portable pressurized ionization monitors in support of workers in radiation hazard areas to corroborate the exposures indicated by the TLDs.

On January 31, 1983, Applicants propounded their first set of interrogatories on Joint Contention IV to the Joint Intervenor. Those interrogatories were designed to discern the basis of Joint Intervenor's contention and the specific inadequacies alleged in Applicants' program. "Applicants' Interrogatories and Request for Production of Documents to Joint Intervenor (First Set)," dated January 31, 1983. On March 18, 1983, the Staff also addressed interrogatories to the Joint Intervenor with regard to Joint Contention IV. "NRC Staff Interrogatories to Joint Intervenor," dated March 18, 1983.

The Joint Intervenor's responses to Applicants' first set of interrogatories and the Staff's interrogatories indicate a lack of understanding of the various aspects of Applicants' program for monitoring and controlling radiation exposure and are notably vague about appropriate means by which the alleged deficiencies could be remedied. For instance, in response to basic questions about the basis of and support for their contention, Joint Intervenor repeatedly responded that they had not obtained sufficient information to respond "at this time." See, e.g. "Joint Intervenor Response to Applicants' Interrogatories and Request for Production of Documents to Joint Intervenor (First Set)," dated March 29, 1983, Responses to Interrogatories IV-1(a) and IV-3(b). "Joint Intervenor's Response to Staff Interrogatories," dated August 31, 1983, Responses to Interrogatories 14, 15, 16, 17, 18, 21, 22, and 23.

In fact, in response to three of the Staff's interrogatories, Joint Intervenors stated that "we . . . do not have time now to undertake this review just to answer your question." Id. at page 6.

Joint Intervenors also took advantage of the discovery process to pose detailed interrogatories to Applicants and the Staff. "Joint Intervenors' Interrogatories to Applicants on Contentions IV, V and VI (First Set)," dated June 27, 1983; "Wells Eddleman's Interrogatories to NRC Staff (First Set)," dated May 6, 1983. Applicants and the Staff provided Joint Intervenors with detailed responses to their relevant interrogatories. "Applicants' Responses to Joint Intervenors' General Interrogatories and Interrogatories on Contentions IV, V and VI to Applicants Carolina Power & Light Company, et al. (First Set)," dated August 1, 1983; "NRC Staff Response to Interrogatories Dated May 6, 1983 Propounded by Wells Eddleman and Joint Intervenors," dated June 24, 1983.

After supplying Joint Intervenors with the information sought in their interrogatories, Applicants served their second set of interrogatories on the Joint Intervenors. "Applicants' Interrogatories and Request for Production of Documents to Joint Intervenors (Fourth Set)," dated October 12, 1983. These interrogatories were designed to clarify some of the concerns alluded to in Joint Intervenors' responses to Applicants' and the Staff's interrogatories and in Joint Intervenors'

interrogatories and to follow up on those areas in which Joint Intervenor had been unresponsive during the first round of discovery. Rather than responding, or even objecting, to those interrogatories, the Joint Intervenor chose simply to ignore Applicants' discovery requests.

After receiving no response or other communications from the Joint Intervenor, Applicants took the initiative to contact counsel for Joint Intervenor and offer an extension of time. The Joint Intervenor refused Applicants' offer and stated, through their counsel, that they would be unable to respond to discovery requests until after the environmental hearing, then scheduled to begin on January 24, 1984. At that point, Applicants were forced to file a motion to compel discovery from the Joint Intervenor. "Applicants' Motion to Compel Discovery on Applicants' Interrogatories and Request for Production of Documents to Joint Intervenor (Fourth and Fifth Sets)," dated November 17, 1983. The Board granted Applicants' motion on November 29, 1983 and ordered Joint Intervenor to respond to Applicants' interrogatories by December 9, 1983. "Memorandum and Order (Ruling on Discovery Disputes Between Applicants and Joint Intervenor)," dated November 29, 1983. On December 12, 1983, Applicants received a copy of a letter from counsel for Joint Intervenor, dated December 9, stating that "Joint Intervenor have been unable to comply with the Board's Order of November 29, 1983, regarding Discovery on Joint

Contentions IV, V, and VI." "Unfortunately, the press of other business prevented us from preparing a response." Letter of M. Travis Payne, dated December 9, 1983.^{1/} As of this date, Joint Intervenors have not made any further effort to respond to Applicants' second round of discovery or to supplement their incomplete responses to Applicants' first set of requests.

II. TIMELINESS

A motion for summary disposition may be filed at any time in the course of a proceeding. Wisconsin Electric Power Company (Point Beach Nuclear Plant, Unit 1), ALAB-696, 16 N.R.C. 1245, 1263 (1982); see also 10 C.F.R. § 2.749(a). In the instant case, Joint Intervenors have had more than 15 months in which to conduct discovery on the issues raised in Joint Contention IV. Yet, as discussed above, they have failed to take advantage of their opportunity to propound a second round of interrogatories to Applicants and have abdicated their

^{1/} Joint Intervenors' failure to comply with the Board order is grounds for sanctions, including dismissal of the contentions at issue. Statement of Policy on Conduct of Licensing Proceedings, CLI-81-8, 13 N.R.C. 452, 454 (1981); see also Wisconsin Electric Power Company (Point Beach Nuclear Plant, Unit 1), ALAB-719, 17 N.R.C. 387 (1983); Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), LBP-83-20A, 17 N.R.C. 586, 590 (1983). Applicants have moved for summary disposition rather than imposition of sanctions because, notwithstanding Joint Intervenors' egregious failure to fulfill their discovery obligations, it is manifestly clear at this time that no genuine issue of material fact exists with respect to Joint Contention IV.

own discovery obligations by failing to respond to Applicants' interrogatories, even when ordered to do so by the Board. Furthermore, Joint Intervenors have known since February, 1983 that Applicants intended to file for early summary disposition on this contention. See "Memorandum and Order (Ruling on Discovery Dispute Between Applicants and Joint Intervenors)," dated November 29, 1983. Thus, the instant motion is timely and the subject contention is ripe for summary disposition.

III. ARGUMENT

The gravamen of Joint Contention IV is that TLDs are inaccurate and lack real-time monitoring capability and therefore cannot ensure worker safety and health. Joint Intervenors also contend that Applicants should use portable pressurized ionization monitors in radiation hazard areas to corroborate the results obtained from TLD readings. As the foregoing Statement of Facts indicates, Joint Intervenors' incomplete responses to discovery have given little clue as to the basis for their belief that TLDs are inadequate to perform the monitoring task for which they are used at the Shearon Harris Nuclear Power Plant ("SHNPP"). The Joint Intervenors have made no attempt whatsoever to explain why they believe TLDs are too inaccurate, what accuracy they believe to be acceptable or how the alleged inaccuracy poses a hazard to workers at SHNPP. To the extent that it is possible to determine Joint Intervenors' concerns,

it appears that they believe: 1) that Applicants' TLDs are too inaccurate because they are only accurate to $\pm 30\%$; 2) that TLDs are inadequate because they do not have "real-time" monitoring capability and 3) that Applicants should be required to augment their personnel dosimetry program by the use of portable pressurized ionization monitors. None of these claims have any basis in fact.

On the other hand, Applicants' position is supported by the affidavit of Stephen A. Browne ("Browne Affidavit"), attached hereto and discussed in detail below. Mr. Browne has more than eight years experience in the field of personnel dosimetry. As a project specialist in health physics at Carolina Power & Light Company ("CP&L"), he is responsible for the technical direction of the personnel dosimetry program at CP&L nuclear plants and has been directly involved in supervising dosimetry programs using TLDs. In addition, Mr. Browne has recently been selected by the National Bureau of Standards as an expert consultant for the National Voluntary Laboratory Accreditation Program's assessment and evaluation of personnel radiation dosimetry processors. Mr. Browne's affidavit demonstrates conclusively that Joint Intervenor's vague allegations lack factual support and that Applicants' program of personnel dosimetry and exposure control complies with all regulatory requirements and standards recommended by recognized authorities in the field and is sufficient to ensure worker health and safety.

With respect to the first of the points raised by Joint Intervenors, reliance is placed on the fact that "error of TLDs plus or minus 3% was established as a basis of a contention in Catawba" as the sole support for the allegation that accuracy greater than $\pm 30\%$ is required for worker safety. "Joint Intervenors' Response to Staff Interrogatories," dated August 31, 1983, at 2. The Catawba contention to which Joint Intervenors refer was recently resolved on summary disposition in the utility's favor, however. Duke Power Co. (Catawba Nuclear Station, Units 1 and 2), Docket Nos. 50-413, 50-414 "Memorandum and Order (Ruling on Applicants and Staff Motions for Summary Disposition of DES Contentions 27 and 11)," (September 30, 1983). Although Joint Intervenors' assertion about an accuracy of $\pm 30\%$ has no factual basis, the Browne Affidavit addresses the point by showing that the TLDs chosen for use at SHNPP comply with all applicable standards and are sufficiently accurate to assure worker safety. The affidavit also demonstrates that the other two issues alluded to by Joint Intervenors are based on misconceptions about the use of TLDs and about the variables associated with monitoring dose from radiation. Therefore, applying the standards governing summary disposition to Joint Contention IV, it is clear that Applicants' motion should be granted.

Joint Intervenors' concerns about the adequacy of TLDs to ensure worker health and safety imply a basic misunderstanding

of the function of TLDs and their application in the total scheme of personnel monitoring and exposure control. In fact, TLDs are only one aspect of a comprehensive program that includes the use of self-reading pocket dosimeters (SRPDs), computerized record-keeping and other monitoring techniques for ensuring worker health and safety. This multi-faceted health physics program, including the use of TLDs, has been reviewed and approved by the Staff. Safety Evaluation Report related to the operation of Shearon Harris Nuclear Power Plant, Units 1 and 2, NUREG-1038 (November, 1983) ("SER"), § 12.5.4 at 12-11. Applicants intend to use TLDs as the dosimeters of record to monitor exposure to personnel at SHNPP. Browne Affidavit at 3. As the Browne affidavit states, TLDs are ideal for this particular function because, in contrast to film badges and SRPDs, TLDs are rugged, not extremely susceptible to temperature and humidity extremes and are accurate over an appropriate range of radiation types and energy levels. Id.

Although TLDs are the preferred choice as dosimeters of record, however, they are not the exclusive means of monitoring personnel exposure. Id. at 6. SRPDs will be used for operational monitoring to provide workers with the basis for making quick decisions about potential hazards. SRPDs are appropriate for this function because, although they are less accurate and reliable than TLDs, they can be read by the workers at any desirable time, thus providing real-time monitoring. Id. A

computerized system will calculate and record accumulated dose to workers by using the most recent TLD reading in conjunction with the day-to-day readings obtained from SRPDs. In this way, the two monitoring instruments will complement each other to provide the most accurate and timely information possible about total accumulated dose to each worker.

While TLDs and SRPDs are used primarily in separate and distinct roles, however, it is worth noting that the two systems serve an auxiliary function in providing backup data for each other. For example, if a worker drops or loses his SRPD, his TLD may be read immediately. Conversely, SRPD readings can be used to substitute for a lost TLD. Id. The availability of this backup system assures that monitoring and exposure control will not be affected by unforeseeable mishaps and further ensures worker health and safety.

The Joint Intervenor's vague allegations that TLDs are too inaccurate simply have no basis in fact. Contrary to Joint Intervenor's claims, TLDs represent the state-of-the-art technique for personnel monitoring. Id. at 8. The use of TLDs has increased steadily over the past few years while the use of film badges has decreased. See SER, supra, at § 12.5.3 at 12-10. The particular TLDs selected by Applicants satisfied rigorous tests for accuracy during a two year study conducted at the University of Michigan under the auspices of the NRC. Browne Affidavit at 9. The standards adopted at these tests

are consistent with the recommendations of preeminent scientific organizations in the national and international community. Id. at 10. Furthermore, it has been recognized that at levels of radiation exposure far below the permissible regulatory limits, the risk to worker safety and health is so slight that great accuracy in dose measurement is not considered necessary. Id. at 11. Applicants' TLDs actually comply with standards higher than some of those that have been recommended by recognized scientific bodies and are certainly within the standard that has been approved for use within the industry.

Finally, Joint Intervenors' claim that Applicants should be required to use portable pressurized ionization monitors suggests a marked naivete about the factors that are relevant to measuring radiation exposure. The instruments Joint Intervenors propose could not be worn by workers--while technically portable, they must be used in a fixed position. Id. at 14. Therefore, portable pressurized ionization monitors are incapable of accounting for variables introduced by 1) the fact that within a given work area the radiation field will vary at different points, 2) the fact that workers will move within a work area, 3) the fact that radiation fields vary over time and 4) the fact that workers spend varying amounts of time in a given work area. Id. at 14-15. The inability of portable pressurized ionization monitors to adjust for these variables

renders them totally inappropriate for measuring dose to workers. It should be noted, however, that Applicants do use pressurized ionization monitors in appropriate ways, for instance, to conduct environmental monitoring.^{2/} Id. at 16-17.

To summarize, it is clear that TLDs are the best available instrument for the routine monitoring aspect of Applicants' personnel monitoring and exposure control program. They are not intended to be and will not be used as the sole device for personnel monitoring. The TLDs chosen by Applicants comply with accepted standards for accuracy, and these standards are reasonable to ensure worker health and safety. The use of portable pressurized ionization monitors in the manner suggested by Joint Intervenor would contribute nothing to Applicants' program for personnel monitoring. The Joint Intervenor have presented no competent evidence to the contrary.

IV. CONCLUSION

Based upon the foregoing and upon the facts set forth in the Browne affidavit and Applicants' Statement of Material Facts, Applicants submit that their motion for summary

^{2/} Of course, the use of portable pressurized ionization monitors could not contribute to the alleged lack of "real-time monitoring" capability because the output of such instruments is dose rate, rather than integrated dose.

disposition should be granted and that Joint Contention IV should be decided in Applicants' favor.

Respectfully submitted,

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