

NUREG-0750
Vol. 34, No. 6
Pages 297-376

NUCLEAR REGULATORY COMMISSION ISSUANCES

December 1991



U.S. NUCLEAR REGULATORY COMMISSION

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Washington, DC 20555
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NUCLEAR REGULATORY COMMISSION ISSUANCES

December 1991

This report includes the issuances received during the specified period from the Commission (CLI), the Atomic Safety and Licensing Boards (LBP), the Administrative Law Judges (ALJ), the Directors' Decisions (DD), and the Denials of Petitions for Rulemaking (DPRM).

The summaries and headnotes preceding the opinions reported herein are not to be deemed a part of those opinions or have any independent legal significance.

U.S. NUCLEAR REGULATORY COMMISSION

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Washington, DC 20555
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ATOMIC SAFETY AND LICENSING BOARD PANEL

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LICENSING BOARDS

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Charles Bechhoefer, Chairman
Dr. A. Dixon Callihan
Dr. Jerry R. Kline

In the Matter of

Docket No. 30-12319-CivP
(ASLBP No. 90-610-03-CivP)
(EA 89-223)
(Materials License
No. 35-17178-01)

TULSA GAMMA RAY, INC.

December 10, 1991

The Licensing Board, in an Initial Decision, determines that a civil penalty sought to be imposed by the NRC Staff against a licensee should be reduced from \$6,750 to \$4,275. The Board in particular based its ruling on what it considered to be excessive escalation applied by the Staff.

**RULES OF PRACTICE: PROPOSED FINDINGS OF FACT
(FORMAT)**

Although various licensing decisions assert that a party, even though not represented by counsel, is not excused from the format requirements for proposed findings of fact (10 C.F.R. § 2.754), even where limited resources are a factor, these decisions relate to licensing proceedings where an intervenor elects to become a party. They are not controlling in a situation where no local public document room is reasonably available and where a licensee (which is facing a loss of resources through a civil penalty proceeding) alleges that it cannot afford to purchase transcripts. The licensing board in that situation should use

its best efforts to understand and rule on the merits on the claims presented by the licensee.

RULES OF PRACTICE: CIVIL PENALTIES

The Commission's program for categorizing violations for the purpose of assessing and determining the amount of civil penalties is set forth in 10 C.F.R. Part 2, Appendix C. In general, the "nature and extent of the enforcement action is intended to reflect the seriousness of the violation," and civil penalties are to be tailored to particular facts and circumstances of the violation.

RULES OF PRACTICE: CIVIL PENALTIES (AGGREGATION)

Prescribed base civil penalties are subject to adjustment for the severity level of the particular violation. In some cases, violations may be evaluated in the aggregate and a single severity level assigned for a group of violations. This authority has been construed to permit the severity level of the aggregated group to be equal to or greater than the severity level of the individual violations comprising the group. When aggregating violations, generally both the number of violations and their seriousness should be taken into account.

RULES OF PRACTICE: CIVIL PENALTIES

After the severity level of a violation has been ascertained, the resultant civil penalty may also be escalated or mitigated, under defined circumstances.

CIVIL PENALTIES: ASSESSMENT

A total of nine violations, considered collectively, including some that in themselves demonstrate a degree of safety significance, may be deemed to constitute a management deficiency sufficient to warrant assessment of a civil penalty.

TECHNICAL ISSUES DISCUSSED

Industrial radiography.

APPEARANCES

Messrs. James C. Moss and Peter James Moss, Tulsa, Oklahoma, for Tulsa Gamma Ray, Inc., Licensee.

Susan Uttal, Esq., and Joseph Rutberg, Esq., for the United States Nuclear Regulatory Commission Staff.

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INITIAL DECISION
(Order Imposing a Civil Monetary Penalty)

Opinion of Judges Bechhoefer and Callihan
(Including Findings of Fact)

This proceeding involves an Order Imposing Civil Monetary Penalty, dated June 6, 1990, in the amount of \$6,750, against Tulsa Gamma Ray, Inc., Tulsa, Oklahoma (hereinafter, Tulsa or Licensee).¹ Tulsa is the holder of NRC Materials License No. 35-17178-01, dated January 26, 1977, authorizing the possession of sealed radiographic sources for use in various exposure devices in the conduct of industrial radiography and for the calibration of radiation survey instruments.² The license includes a number of technical conditions governing the conduct of industrial radiography, including those required by the regulations in 10 C.F.R. Part 34.

The Civil Penalty Order was preceded by a written Notice of Violation and Proposed Imposition of Civil Penalty, dated December 29, 1989, which proposed a civil penalty of \$7,500.³ Based on the Licensee's response, the Staff reduced the proposed civil penalty to \$6,750, the amount sought by the Civil Penalty Order.

For reasons set forth below, the majority of the Board has concluded that a significant civil penalty should be imposed but that the amount sought by the Staff should be reduced to \$4,275.

¹The Order was published at 55 Fed. Reg. 24,949 (June 19, 1990). See also NRC Staff Testimony of Charles Cain, Linda Kasner, and Joseph DeMedico (hereinafter, Staff Testimony), ff. Tr. 123, Attach. 12. References to the prepared direct testimony of particular Staff witnesses (included in NRC Staff Testimony) will be referenced as (last name of witness), ff. Tr. 123, at (page of prepared testimony).

²Staff Testimony, ff. Tr. 123, Attach. 4 and 12 (at A12-3).

³*Id.*, Attach. 11.

I. SUMMARY OF VIOLATIONS

The violations included in the Notice of Violation are set forth in full in Appendix A to this Decision. To the extent pertinent, they are also described later in this Decision.

In summary, however, they include three that appear to the Board to be quite serious: the failure of a radiographer to conduct a survey after any of four separate radiographic exposures (Violation 1a); the failure of radiographers properly to post an area where radiographic exposures were being conducted (Violation 1b); and the failure to block and brace radioactive material packages during transportation (Violation 4b). Beyond that, they include three involving the failure to maintain adequate records of radioactive exposures of radiographers (Violations 2a, 2b, 2c); one involving the failure to maintain proper inventory control of sealed sources (Violation 3); two involving the failure to maintain certain transportation records (Violations 4a and 4c); and one involving the incorrect placarding of a vehicle during transportation of radioactive material (Violation 4d). The Notice of Violation prescribed a total civil penalty of \$7,500 for these violations.⁴

In its response dated February 22, 1990, to the Notice of Violation, the Licensee admitted nine out of the ten alleged violations but challenged the Staff's assessment of their severity or significance.⁵ In particular, Tulsa pointed to what it deemed to be extenuating circumstances concerning many of the violations. The Licensee denied one violation (number 3, "Inventory Control") and the Staff accepted the Licensee's explanation, thereby withdrawing one of the ten alleged violations and reducing the civil penalty by 10%—to \$6,750 (i.e., it treated each violation as equal in amount of penalty (\$750) and reduced the proposed penalty for ten violations by 10%.

II. PROCEDURAL HISTORY

Following issuance of the Civil Penalty Order, the Licensee filed a timely response dated July 3, 1990. It claimed in essence that the violations are not significant enough to warrant imposition of a civil penalty. It sought reconsideration (by the Staff) of the civil penalty and in the alternative (as set forth in the Civil Penalty Order) requested a hearing.

By letter dated July 31, 1990, the Director of NRC's Office of Enforcement (OE) refused to withdraw the Civil Penalty Order.⁶ As a result, a Licensing

⁴ *Id.*

⁵ *Id.*, Attach. 13, DelMedico, ff. Tr. 123, at 28-29, 31-33.

⁶ Notice of Hearing and Other Matters, LBP-90-51, 52 NRC 107 (1990).

Board was established to preside over the hearing.⁷ On August 29, 1990, the Board issued a Notice of Hearing.⁸ As set forth in that Notice, the issue to be heard (prescribed by the Civil Penalty Order) is "whether, on the basis of the violations admitted by the licensee, consisting of the violations set forth in the Notice of Violation as modified by the withdrawal of Violation 3, this Order should be sustained [in the amount of \$6,750]."

In issuing the Notice of Hearing, the Board urged the parties to attempt to reach agreement on the scope of the prescribed issue and schedules for the ensuing litigation, as well as settlement of the proceeding. After advice from the Staff that the parties had been unable to settle the proceeding or to reach agreement on the scope of the issue to be litigated,⁹ the Board scheduled a pre-hearing conference, to be conducted by telephone.¹⁰ The conference commenced on October 16, 1990,¹¹ and continued on November 8, 1990.¹²

At the conference, the Board reiterated the limited scope of the issues permitted by the Civil Penalty Order to be considered at the hearing. Specifically, the Board defined the issue to be "whether the amount of the penalty imposed was correct under the Enforcement Policy, 10 C.F.R. Part 2, Appendix C, i.e., whether it was correct to collectively classify the Severity Level IV and V violations as a Severity Level III violation and impose a monetary penalty, and whether the amount of the penalty was correctly arrived at, taking into account the factors in the Enforcement Policy, including mitigating circumstances."¹³

Based on a colloquy at the conference, however, the Board directed the Staff to provide a further discussion of the matters of fact and law relied on by the Staff to consider the Severity Level IV and V violations collectively as a Severity Level III violation.¹⁴ The Board also established a schedule for discovery, for filing direct testimony, and for commencement of the hearing.¹⁵ The Staff filed direct testimony, but we later ruled that the Licensee could present its testimony orally if it wished to do so.¹⁶

⁷ Establishment of Atomic Safety and Licensing Board, dated August 16, 1990, 55 Fed. Reg. 34,635 (Aug. 23, 1990). The Board was later reconstituted to substitute a new Chairman, because of schedule conflicts experienced by the former Chairman. Notice of Reconstitution of Board, dated June 3, 1991, 56 Fed. Reg. 26,701 (June 10, 1991).

⁸ LBP-90-31, *supra*.

⁹ Letter from Staff counsel to Licensing Board, dated September 21, 1990. See also Letter from the Licensee to the Licensing Board Chairman, dated September 17, 1990.

¹⁰ See Notice of Prehearing Conference, dated October 4, 1990, scheduling the conference for October 16, 1990.

¹¹ Prehearing Conference Memorandum and Order, LBP-90-42, 32 NRC 387 (1990).

¹² Memorandum and Order (Memorializing Prehearing Conference), LBP-90-43, 32 NRC 390 (1990).

¹³ *Id.*, 32 NRC at 391. See also LBP-90-42, *supra*, 32 NRC at 387-88.

¹⁴ LBP-90-43, *supra*, 32 NRC at 391-92. The Staff did so by letter dated November 19, 1990.

¹⁵ See Hearing Notice, dated May 22, 1991, 56 Fed. Reg. 24,420 (May 30, 1991).

¹⁶ LBP-91-25, 33 NRC 535 (June 13, 1991).

The Board conducted two days of hearings in Tulsa, Oklahoma, on June 25 and 26, 1991. (At the outset of the first hearing day, the Board conducted a prehearing conference in order to review hearing procedures with the participants.¹⁷) The Staff presented a panel of three witnesses: Mr. Charles Cain, Chief, Nuclear Materials Safeguards and Inspection Section, NRC Region IV; Ms. Linda Kasner, Senior Radiation Specialist, Nuclear Materials and Safeguards Inspection Section, NRC Region IV; and Mr. Joseph DelMedico, Senior Enforcement Specialist at NRC Headquarters.¹⁸ The Licensee presented two witnesses: Messrs. James C. Moss, President and owner of Tulsa,¹⁹ and Peter J. Moss, Vice-President of Tulsa and the son of James Moss.²⁰ We find each of these witnesses technically qualified to present his or her respective testimony.²¹

During the hearing, the Board established schedules for the filing of proposed findings of fact and conclusions of law.²² In conformance with the schedules (as later modified), the Staff filed its proposed findings on August 16, 1991, the Licensee filed its response on September 9, 1991, and the Staff filed its reply on September 27, 1991.²³

The Staff, in its Reply FOF, at 2 n.3, points out that the Licensee, in its FOF, has made no effort to comply with 10 C.F.R. § 2.754(c), which prescribes the format for proposed findings, including the use of numbered paragraphs and references to transcript citations. The Staff points to various licensing decisions that assert that a party, even though not represented by counsel, is not excused from these requirements, even where limited resources are a factor. The Staff urges that we not "excuse" the Licensee for failing to attempt to comply with the requirements.

The Licensee explains (Licensee FOF at 1) that its findings were presented without the benefit of transcripts "[b]ecause of the high cost of these documents we were unable to acquire them." In that connection, as we pointed out in our Memorandum (Proposed Findings/Conclusions and Transcripts) dated July 16, 1991 (unpublished), there is no local public document room (where transcripts would be available in microfiche form) in Tulsa (where the Licensee is located)

¹⁷Tr. 93-109. See also Memorandum and Order (Prehearing Conference and Evidentiary Hearing) dated June 10, 1991, 56 Fed. Reg. 27,548 (June 14, 1991).

¹⁸Staff Testimony, Tr. Tr. 123, at 1.

¹⁹Tr. 93 (J. Moss).

²⁰Tr. 94 (J. Moss).

²¹We explicitly reject the Licensee's claim that the Staff witnesses "could be judged incompetent for a lack of practical experience" (Licensee Findings of Fact at 3). All of the Staff witnesses have had training that included operation of a radiographic exposure device (Staff Findings of Fact at 7; Tr. 124-25 (Kasner, Cain, DelMedico)).

²²Tr. 480-81, see also Memorandum dated July 16, 1991 (unpublished). Thereafter, minor changes in the dates were authorized. See Memorandum and Order dated July 31, 1991 (unpublished). Because of service difficulties (resulting from the Licensee's failure to serve a copy of its findings on the Staff), we hereby confirm our approval by telephone of the Staff's request for an extension until Friday, September 27, 1991, to file its reply findings.

²³These filings will hereafter be referenced as "Staff FOF," "Licensee FOF," and "Staff Reply FOF."

or, indeed, in the State of Oklahoma. The nearest (in Arkansas and Kansas, respectively) are over 200 miles away.

Contrary to the claim of the Staff, the decisions cited are not controlling: they relate to intervenors who *elect* on their own to participate in a licensing proceeding — not the situation where, as here, the Staff is attempting to impinge upon a licensee's property interests. The Licensee must participate to be able to defend its vested property interests, and if it makes a convincing showing that it cannot comply with all of the technical pleading requirements, we should use our best efforts to understand and rule on the merits of the claims presented. We are doing so here. In reaching our Decision, we have reviewed each of the proposed findings submitted by the parties; any not explicitly incorporated directly or inferentially in this Decision are rejected as being unsupported in law or in fact or as being unnecessary to our Decision.

III. REGULATORY STANDARDS

The Commission's program for categorizing violations for the purpose of assessing and determining the amount of civil penalties is set forth in 10 C.F.R. Part 2, Appendix C, "General Statement of Policy and Procedure for NRC Enforcement Actions." In general, the "nature and extent of the enforcement action is intended to reflect the seriousness of the violation involved."²⁴ Further, civil penalties are to be tailored to the particular facts and circumstances of the violation involved.

Base civil penalties are set forth in Table 1A of those regulations, categorized in accordance with the type of activity authorized by the license and the particular aspect of that activity giving rise to the violation in question.²⁵ Here, the Licensee falls within the activity generally described at the time of the purported violations as "Industries [*sic*] users of material"²⁶ (specifically designated as including "industrial radiographers"). Table 1A prescribes different base civil penalties for operations and health-physics violations or, alternatively, transportation violations. The base civil penalty for the activity in which Tulsa is engaged is \$10,000 for operations and health-physics violations (six of which are involved here, including two of those we find are more significant) and \$5,000 for transportation violations involving the type of packaging required to be used by Tulsa (represented by four of the violations here).

²⁴ 10 C.F.R. Part 2, Appendix C, § V.

²⁵ 10 C.F.R. Part 2, Appendix C, § V.B, Table 1A.

²⁶ In a recent revision to the Enforcement Policy, the Commission corrected this typographical error, the category now reads "Industrial Users of Material . . ." 56 Fed. Reg. 40,664, 40,686 (Aug. . ., 1991, effective Sept. 14, 1991).

Base civil penalties are subject to adjustment for the severity level of the particular violation or violations. The adjustment percentages of the base amounts listed in Table 1A are 100% for Severity Level I, 80% for Severity Level II, 50% for Severity Level III, 15% for Severity Level IV, and 5% for Severity Level V violations.²⁷

The regulations further provide that, in each case, the severity of a violation is to be characterized "at the level best suited to the significance of the particular violation." In some cases, violations "may be evaluated in the aggregate and a single severity level assigned for a group of violations."²⁸ Although not specifically defined by the regulations, this authority has been construed to permit the severity level of the aggregated group to be equal to or greater than the severity level of individual violations comprising the group. *Advanced Medical Systems, Inc.* (One Factory Row, Geneva, Ohio 44041), LBP-91-9, 33 NRC 212, 225-28 (1991), *appeal pending before Commission*. The Staff utilized this authority in this case.

The applicable criteria also provide for the escalation or mitigation of civil penalties. The Staff takes the position that escalation or mitigation is considered only after the severity level of a violation or violations has been ascertained,²⁹ but the factors that influence escalation or mitigation may also be taken into account in determining the severity level of a violation or series of violations.³⁰ Thus, "enforcement sanctions will normally escalate for recurring similar violations."³¹ The sanction itself (i.e., the severity level), however, is also likely to be more severe when violations are recurring.³² Appendix C also authorizes mitigation of penalties, for such factors as identification and reporting of a violation by a licensee, corrective action to prevent recurrence, and prior good performance by the licensee.³³

According to the Staff, a civil penalty is normally assessed for a violation or group of violations categorized at Severity Levels I, II, or III, unless application of the mitigation factors reduces the amount to a zero penalty.³⁴ The criteria provide that a civil penalty may also be imposed for Severity Level IV violations that are similar to "previous violations for which the [L]icensee did not take effective corrective action."³⁵ The Staff applies this to both Severity Level IV and V violations.³⁶

²⁷ 10 C.F.R. Part 2, Appendix C, § V.B, Table 1B.

²⁸ 10 C.F.R. Part 2, Appendix C, § III.

²⁹ Tr. 141 (DelMedico).

³⁰ Tr. 312-13 (DelMedico).

³¹ 10 C.F.R. Part 2, Appendix C, § V.D.

³² Tr. 336 (Cain).

³³ 10 C.F.R. Part 2, Appendix C, § V.B.1-3.

³⁴ DelMedico, II, Tr. 123, at 24.

³⁵ 10 C.F.R. Part 2, Appendix C, § V.B; DelMedico, II, Tr. 123, at 24.

³⁶ Tr. 337 (DelMedico).

IV. DISCUSSION OF EVIDENCE

In evaluating the appropriateness of the civil penalty sought to be imposed by the Staff, we observe first that the burden of proof is on the Staff, as proponent of the Civil Penalty Order. 10 C.F.R. § 2.732. We have evaluated the record evidence with that in mind.

1. Nature of the Regulated Industry

The centerpiece of the Staff's Civil Penalty Order is the significant health and safety hazard that may be posed by radiographic operations and the concomitant obligation of a licensee to adhere strictly to the regulatory standards established to avoid adverse consequences. As set forth by the Staff,³⁷ and not disputed by the Licensee, radiography is the examination of the structure of materials by nondestructive methods utilizing gamma radiation emitted by an encapsulated quantity of a by-product material, an operation that usually requires mechanically moving a highly radioactive source³⁸ from a well-shielded position in an exposure device, through a region of little or no shielding, into another component of the equipment which provides partial shielding.³⁹ The first of these positions is within a box, made of a heavy metal such as lead or uranium, in which the source is located when not serving its intended function.⁴⁰

The second part of the overall exposure device, often called the collimator,⁴¹ is also of heavy metal, usually tungsten, located proximate to the object to be radiographed. It has two apertures — one for the entrance of the source and the other for the directed, or collimated, emission of radiation from the source toward the area to be inspected.

These two heavy-metal objects, in practice, are connected by a tube, called a guide tube, which is commonly on the order of 10 feet long.⁴² The guide tube provides a path for the source between its storage position and its location in the collimator during an exposure. The guide tube provides little shielding of the source as it traverses the tube. Motion of the source is provided by a stiff

³⁷ Staff HOF at 17-18, 23-25. This summary of the equipment and methodology common to industrial radiography is the Board's understanding and is gleaned and consolidated from testimony in an attempt to clarify the topic and the nomenclature by, for example, reducing the use of the jargon of the trade.

³⁸ The material of the source is usually cobalt-60 or iridium-192 in strengths of the order of 100 Ci. See Staff Testimony, Attach. 4.

³⁹ See 10 C.F.R. § 30.4, Kasner, II, Tr. 123, at 3.

⁴⁰ The storage/transport container is sometimes called a "camera." Tr. 185 (Cain). Additionally, as confused nomenclature, "exposure device" denotes the shielding box into which the radiographic source is placed for transport and storage. Tr. 182 (Kasner); Tr. 185 (Cain). During an exposure, the source is said to be retrieved from the "exposure device." Tr. 188 (Kasner).

⁴¹ Tr. 183, 192 (Kasner).

⁴² Tr. 183 (Kasner).

cable to the end of which the source is attached. The cable, in turn, is fed into and through the guide tube by a mechanism incorporating a crank and reel.⁴³ This mechanism is located at or near the source storage container.

The dimensions of the source, the guide tube, and the cable are such that the likelihood of the source not being advanced is small.⁴⁴ The converse situation, however, can be more severe. The Staff reported disconnections of sources from control cables whereby the source was not retracted into its shield by the reverse cranking operation.⁴⁵ The consequential severity of such misoperation in relation to personnel exposures, to be discussed later, is apparent when, for example, the source remains, after the disconnect, in the lightweight guide tube.

The Staff presented a description of the potential for inadvertent and excessive radiation exposures to the public and to persons authorized to conduct radiological examinations absent adherence to established procedures such as those set forth in the regulations.⁴⁶ The intensity of the gamma radiation field adjacent to a typical source used in industrial radiography is sufficient to cause biological damage to tissue within a few seconds and to be potentially lethal after a few minutes of direct exposure.⁴⁷ Examples of such consequences are tellingly portrayed in an NRC publication titled "Working Safely in Gamma Radiography" (NUREG/BR-0024, September 1982), referenced by Staff witnesses⁴⁸ and introduced into the record.⁴⁹

2. Discovery of Violations

The violations that gave rise to the Civil Penalty Order emanated from a routine unannounced inspection of the Licensee's operations on October 2-4, 1989, conducted by Ms. Linda Kasner. At that time, Ms. Kasner was an inspector with experience as a Medical Health Physicist; subsequently she became a Senior Radiation Specialist. Ms. Kasner had previously assisted another inspector during a routine inspection of Tulsa in November 1988, and she subsequently performed routine inspections in October 1989 (the one under consideration here), and March 1991.⁵⁰ She has had experience in performing

⁴³ The process whereby the cable and source are moved through the tube is called "cranking." Tr. 185 (Cain).

⁴⁴ Tr. 188-89 (Cain).

⁴⁵ Tr. 199 (Cain).

⁴⁶ See 10 C.F.R. Part 34.

⁴⁷ Cain, ff. Tr. 123, at 8-9.

⁴⁸ Tr. 182 (Kasner).

⁴⁹ Staff Exh. 1. Several copies were available at the hearing for the use of parties (who had prior access to the document) and the Board. Copies were thereafter distributed to the Board and the docket file by letter from Staff counsel dated July 25, 1991.

⁵⁰ Kasner, ff. Tr. 123, at 1, 2, 3; Staff Testimony, ff. Tr. 123, Attach. 2.

radiographic field operations, including cranking out radiographic sources, as described above.⁵¹

During the October 1989 inspection, she identified ten apparent violations, set forth in Appendix A to this Decision.⁵² (As mentioned earlier, the Staff subsequently determined that one violation did not occur, leaving nine outstanding.) The Licensee was provided a copy of the inspection report by letter dated November 13, 1989.⁵³ Previously, however, at the exit interview of the inspection, Ms. Kasner reviewed the apparent violations with three representatives from the Licensee (two of whom appeared as witnesses in this hearing).⁵⁴

By letter dated November 17, 1989, to NRC, the Licensee responded to the apparent violations set forth in the inspection report, with explanations and proposed or effectuated corrective actions.⁵⁵ Three days later, on November 20, 1989, NRC's findings were discussed with Mr. James C. Moss, Tulsa's President, at an Enforcement Conference held at the NRC office in Arlington, Texas.⁵⁶

3. Staff Calculation of Civil Penalty

The specific aspects of the industrial-radiography activity giving rise to the violations here are denominated by the Notice of Violation as falling in the aggregate within Severity Level III, Supplements IV ("Health Physics"), V ("Transportation"), and VI ("Fuel Cycle and Materials Operations"). The operative language in each of these Supplements is said by the Staff to be

Breakdown in the radiation safety program involving a number of violations that are related . . . that collectively represent a potentially significant lack of attention or carelessness toward licensed responsibilities.⁵⁷

The nine admitted violations here fall into three general categories. Violations 1a and 1b — two of the more serious, in the Board's opinion — involve the active conduct of radiographic operations. Violations 2a, 2b, and 2c concern failures to determine and record occupational exposure data concerning several radiographers. Two of these (2b and 2c) were designated as repeat violations.

⁵¹ Tr. 124 (Kasner).

⁵² NRC Inspection Report 30-1231989-02, dated November 9, 1989, Staff Testimony, Attach. 5, at A5-3 through A5-12.

⁵³ Staff Testimony, ff. Tr. 123, at A5-1 and A5-2.

⁵⁴ *Id.* at A5-5.

⁵⁵ *Id.*, Attach. 9.

⁵⁶ *Id.*, Attach. 10, at A10-1 and A10-2; Tr. 323 (DeiMedico).

⁵⁷ DeiMedico, ff. Tr. 123, at 25, 29, citing similar language in 10 C.F.R. Part 2, Appendix C, Supp. IV ("Health Physics"), Severity Level III, Item C.12, Supp. V ("Transportation"), Severity Level III, Item C.5, and Supp. VI ("Fuel Cycle and Materials Operations"), Severity Level III, Item C.8.

Violations 4a, 4b, 4c, and 4d involve failures relating to the transportation of radiographic exposure devices or radiographic materials — with 4b, concerning a failure to brace or block packages containing radioactive materials during transportation being the most serious. As noted above, under Appendix C, transportation violations entail a lesser base civil penalty than do operations or health-physics violations.

Neither in the Civil Penalty Order nor the earlier Notice of Violation did the Staff assign severity categories to any of the individual violations. They were only considered in the aggregate as Severity Level III.⁵⁸

The Staff derived the \$6,750 civil penalty in the following manner.⁵⁹ As set forth in Tables 1A and 1B of the Enforcement Policy, referenced above, the base civil penalty for a Severity Level III operations or health-physics violation against a licensee in the category in which Tulsa falls is \$5,000 (50% of the maximum penalty of \$10,000 for that category of licensee). The Staff mitigated this penalty on the basis of prompt and comprehensive corrective action on the specific violations, but it faulted the Licensee for not having addressed to the Staff's satisfaction (at the time of the enforcement conference) the asserted lack of management attention to licensed activities.⁶⁰ Out of a possible 50% mitigation for corrective action, therefore, the Staff allowed 25% (bringing the penalty at that stage of the calculation to \$3,750).

The Staff then determined that escalation should be applied, based on prior notice to the Licensee of similar events or problems and its poor prior regulatory performance. The Staff in particular cited its prior notice concerning lack of management attention to licensed activities and prior notice concerning at least six of the specific violations. The Staff testified that seven violations had been noted during a previous inspection in 1988.⁶¹ (By the time of the 1989 inspection, six of those had been "closed," apparently to the satisfaction of the Staff, and the Licensee had proposed a solution to the other that was awaiting Staff review.⁶²)

The Staff pointed out that up to 100% escalation was permitted for prior notice of similar events and up to an additional 100% for poor prior regulatory performance. The Staff applied a 75% escalation to the base penalty of \$5,000, out of a total possible 200% escalation, adding \$3,750 to the above-calculated penalty of \$3,750, reaching a total of \$7,500.⁶³ (As stated earlier, this penalty was based on ten violations; when the Staff was satisfied that one had not been committed, the penalty was reduced by 10%, bringing it to \$5,750.)

⁵⁸ Tr. 316 (DelMedico).

⁵⁹ DelMedico, II, Tr. 123, at 30-31.

⁶⁰ *Id.*; Tr. 127 (Carr); Tr. 128 (DelMedico).

⁶¹ Staff Exh. 2, Notice of Violation dated January 10, 1989, based on inspection conducted on November 29-30, 1988.

⁶² Staff Testimony, II, Tr. 123, at A5-5 and A5-6.

⁶³ DelMedico, II, Tr. 123, at 31.

4. Evaluation of Severity Level of Civil Penalty

The Staff's rationale for assigning the aggregated violations to a Severity Level III category appears to depend on its view that a significant number of violations *per se* translates into a management deficiency. This is so irrespective of the seriousness (in the Staff's view) of any of the particular violations or whether management could, in fact, have averted those violations by adopting any systemic program.

Prior to responding to inquiry by the Board at the hearing,⁶⁴ the Staff did not even evaluate particular violations: it merely set a severity level for all of the violations collectively, determined the penalty for that severity level, and divided the penalty proportionately for each of the violations (resulting in a penalty of \$750 for each violation). Although, the Staff explains that the \$750 represents only "an administrative means for allocating the civil penalty"⁶⁵ for a more serious problem, the effect is the apparent imposition of the same civil penalty for activities to which widely variant severity levels are attributable.

As pointed out previously, in the proceeding before us, the Staff aggregated a group of nine mixed-severity violations, which individually ranged from Severity Level IV to Level V, into a single Severity Level III violation. It set the final severity level on the basis of its inference that the group of violations collectively demonstrated lack of management control or carelessness toward licensed responsibility and that the violations show a pattern that is attributable to the same root cause. The inference was made and the severity level assigned without first specifically evaluating and classifying each individual violation.⁶⁶

According to the Staff, the root cause for the violations is a breakdown in management control of licensed programs, manifest by: (1) the number and nature of violations; (2) the fact that the violations were identified by NRC rather than the Licensee; (3) the fact that the Licensee had been previously warned by NRC in correspondence to improve management attention toward compliance; (4) the fact that some violations were recurring; and, (5) the lack of management attention to compliance issues raised in information notices.⁶⁷ The Staff adds that it assessed the civil penalty "specifically because the Licensee relied on the NRC to identify its violations rather than having its own management program to self identify and correct the violations."⁶⁸

The Licensee strongly objects to the aggregation of violations with concomitant increase in the severity level that resulted in the assessment of a civil penalty. It believes that most of the violations were individually of minor safety signif-

⁶⁴ See Tr. 330-38 (DelMedico, Cont).

⁶⁵ Staff Reply POF at 6.

⁶⁶ DelMedico, II Tr. 123, at 26, 29-30.

⁶⁷ *Id.* at 30.

⁶⁸ Staff POF, "Conclusion of Fact" No. 10.

icance and that no civil penalty was warranted. In referring to the infractions involving recordkeeping oversights or omissions, it queries "Should each warrant a \$750 penalty?"⁶⁹ It concludes that these NRC penalties are "exorbitant and arbitrary."⁷⁰

5. Evaluation of Severity Level of Violations

Under the Enforcement Policy, the "severity of a violation [is] characterized at the level best suited to the significance of the particular violation." Beyond that, in some cases, the Staff is permitted to evaluate violations "in the aggregate" and assign "a single severity level . . . for a group of violations."⁷¹ That is the process the Staff followed in this case, aggregating a number of violations to reach a single Severity Level III violation.

To determine whether the Staff was justified in following that practice in this case, we must determine whether the individual violations here, when considered collectively, warrant that degree of severity. We note at the outset, however, that the several violations are clearly not of equal severity and, as a matter of sound discretion, should not be treated alike.

We turn first to the three admitted violations that we deem most serious: Violations 1a, 1b, and 4b. Then we will analyze the other less-serious violations.

(a) Violation 1a

Violation 1a involved a failure to conduct a radiation survey of an exposure device following its use at a temporary jobsite. The Staff inspector observed two radiographers engaged in activities on the rooftop of a refinery building.⁷² She first observed two exposures from the ground but saw no post-exposure surveys being performed. While going up to the roof, she observed a third exposure for which no survey was performed. Once on the roof, she observed the radiographers leaving the survey instrument at the location of the crank, approaching the collimator to reposition the source guide tube for the next exposure, and (despite their awareness of her presence) failing to conduct a survey.⁷³ She testified that, when she later questioned the radiographers, they admitted not having performed the surveys despite their knowledge of the requirement to do so.

⁶⁹ License POF at 2.

⁷⁰ *Id.*

⁷¹ 10 C.F.R. Part 2, Appendix C, § III.

⁷² *Kasner*, II, Tr. 122 at 4; Tr. 194 (*Kasner*).

⁷³ For a further discussion, see Tr. 201 (*Gwin*).

As set forth both in its letter of November 17, 1989, and in its February 22, 1990 response to the Notice of Violation, the Licensee claimed that the lead radiographer in question was well trained and well qualified to perform radiography but was under some stress — caused, in part, by the presence of the NRC inspector.⁷⁴ That is no excuse, however, for the violation in question. Radiographers are expected to be able to operate in accordance with regulatory requirements under all circumstances, including stressful conditions.⁷⁵

Surveys are required to be performed after each use of the source, to ensure that it is retracted into its shielding container. 10 C.F.R. § 34.43(b).⁷⁶ Performance of a survey after each use of the source, to ensure that it is retracted into its shield, is essential to the health and safety of individuals who may be nearby such operations: failure to conduct the survey properly is the most common contributing factor in radiography incidents of overexposures of personnel.⁷⁷ Indeed, as the Staff testified, failure to conduct a survey would currently be considered a Severity Level III violation in itself,⁷⁸ and such failure also could have been considered as Severity Level III at the time of the 1989 violation.⁷⁹

The Staff rated this violation as the most serious of the nine under review.⁸⁰ We agree.

(b) Violation 1b

Violation 1b involved the failure to post a "High Radiation Area" sign denoting an area where the radiographers were conducting radiographic operations. Indeed, the site, the job, the time frame, the radiographers, and the NRC inspector who observed the activities (Ms. Kasner) were the same as in Violation 1a, described above.⁸¹

Ms. Kasner testified, without contradiction, that the top of the refinery was not properly posted, as required by 10 C.F.R. §§ 34.42, 20.203(b), and 20.203(c)(1).

⁷⁴Licensee Exh. 1 at 2; see also Staff Testimony, Attach. 9 (redacted version of November 17, 1989 letter). Although the Staff, in presenting its case, has asserted the right to redact material from documents on grounds of relevancy, we question whether it was appropriate here to excise any portion of the Licensee's explanation of what happened, notwithstanding the Staff's view of the pertinence or validity of the redacted portions. We have the obligation to judge the pertinence of the Licensee's responses to the issues in this proceeding and cannot do so without being afforded the *entire* response. For that reason, we are relying on Licensee Exhibit 1 for the presentation of the Licensee's response.

⁷⁵Tr. 174-75, 180 (Kasner); Tr. 380 (DeMedico); Tr. 382-83 (Cain).

⁷⁶See also Tr. 205-06 (Kasner); Staff Exh. 1 at 118.

⁷⁷Cain, II, Tr. 123, at 15-16.

⁷⁸Tr. 177 (Kasner). Subsequent to the violations at issue here, the Commission amended its enforcement criteria specifically to reference, as a Severity Level III violation, the failure to conduct a survey. Tr. 177-78 (DeMedico). See 55 Fed. Reg. 843 (Jan. 10, 1990).

⁷⁹Tr. 177 (Kasner); Tr. 333-34, 368 (DeMedico).

⁸⁰Tr. 177 (Kasner).

⁸¹Tr. 209 (Kasner).

One of two outside stairways leading to the roof — the one used by Ms. Kasner — was not restricted or posted at all. The other was only restricted at the top. Access to the roof could readily be gained by persons not employed by Tulsa, and no one had even checked to see if the building was occupied. Nor was the area under constant surveillance, as also required by the regulations.⁸²

In its response dated November 17, 1989, to the inspection report, the Licensee stated only that each of its employees was aware of the requirement.⁸³ In its response dated February 22, 1990, to the Notice of Violation, however, the Licensee observed that the building was unoccupied, the only access to the roof was by three staircases (one of which presumably was inside), that the staircases were barricaded with ropes and radiation area signs, that ropes around the radiation area were erected, and that the exposure time was but 45 seconds. It concluded that "[a]lthough our operating procedures require posting of the 'High Radiation Area' signs there was no danger of anyone entering the area and receiving any radiation because of not posting a 'High Radiation Area' sign."⁸⁴

The Licensee's claims recited above are not supported by the evidence of record supplied by the Staff, which was un rebutted. We therefore adopt the facts as advanced by the Staff with regard to the posting violation. In particular, we note that the Staff inspector did indeed reach the rooftop area through an unposted and unbarricaded stairway.⁸⁵

The Staff also established the significance of the violation. Posting is required due to the radiation levels potentially present (where a major portion of the body could receive in any 1 hour a dose in excess of 100 millirems) and the need to make individuals in the area aware of the hazards present. Posting is important in maintaining a safe environment for performing radiography, to prevent unnecessary exposure of nonradiographic workers and the general public. Radiographers may not be capable of maintaining 360° surveillance to prevent unauthorized entry. The majority of overexposures and unnecessary exposures of members of the public are associated with failures to properly post and restrict the area.⁸⁶

Indeed, failure to post properly could today be regarded as serious enough, in itself, to constitute a Severity Level III violation. The Staff indicated that, at the time of the violation, it would have been classed as Severity Level IV, although in some circumstances it could have been higher.⁸⁷

⁸² Kasner, ff. Tr. 123, at 5; Tr. 174, 207-10 (Kasner); see also Staff Testimony, ff. Tr. 123, at A5-10.

⁸³ Staff Testimony, ff. Tr. 123, at A9-2 (item 6).

⁸⁴ Licensee Exh. 1 at 2; Staff Testimony, ff. Tr. 123, at A13-2.

⁸⁵ Tr. 207-09 (Kasner); Kasner, ff. Tr. 123, at 4.

⁸⁶ Cain, ff. Tr. 123, at 16-17.

⁸⁷ Tr. 335 (DeiMaddio); see also 10 C.F.R. Part 2, Appendix C, Supp. VI, C.1.

(c) *Violation 4b*

Violation 4b, the third of the more serious violations, involved the failure to brace or block packages containing radioactive materials during transportation. During a visit to the Licensee's facility, the NRC inspector (Ms. Kasner) observed two radiographers departing for a temporary jobsite with an overpack (containing an exposure device) within the rear compartment of a truck.⁸⁸ The truck doors were open.⁸⁹ (The lead radiographer was the same as the lead radiographer in the foregoing rooftop incidents.⁹⁰)

Because the radiographers had failed to secure the rear doors of the truck, and they had opened, the overpack was observed to be not blocked or braced at the time, leaving nothing to prevent the device from sliding across the floor or, in fact, out of the truck.⁹¹ That it did not do so was fortuitous, in the view of Ms. Kasner.⁹²

During two field inspections, Ms. Kasner also observed that two radiographic devices had been transported to the field sites without blocking or bracing, as required by a Department of Transportation regulation, thus permitting the devices to change position within the vehicle. During subsequent interviews of Licensee personnel, each radiographer interviewed admitted that overpacks used to transport radiographic devices were not normally braced or blocked during routine transportation. The Licensee earlier had acknowledged to the Staff that it had received an NRC Information Notice (IN-87-47, dated October 5, 1987) reminding licensees of the requirements to use an overpack and to block and brace the packages during transportation.

According to the Staff, the requirement for blocking and bracing is designed to prevent the transportation of packages containing hazardous material in a manner that would permit movement of the package and possible violation of the shielding it provides. Beyond that, failure to block or brace may permit the device to fall out of the vehicle and be retrieved by a member of the public, leading to a potentially hazardous exposure. Failure to observe the requirement thus may have significant safety implications.⁹³

The Licensee provided a number of seemingly contradictory explanations for the acknowledged violation. In its letter of November 17, 1989, responding to the inspection report, it indicated that as of a 1988 inspection, it was not aware of the requirement but that, "Effective November 17, 1989 all trucks used

⁸⁸ An overpack is a steel drum containing styrofoam inserts into which the exposure device or camera is placed for transportation. Tr. 219 (Cain).

⁸⁹ Tr. 231 (Kasner).

⁹⁰ Tr. 426 (P. Moss).

⁹¹ Kasner, ff. Tr. 123, at 6, *see also* Tr. 231 (Kasner); Tr. 239-40 (DeMedico).

⁹² Kasner, ff. Tr. 123, at 6.

⁹³ Cain, ff. Tr. 123, at 21.

for radiography are now equipped with restraining cords to prevent movement within the vehicle." In its February 22, 1990 response to the Notice of Violation, the Licensee cited difficulties in blocking and bracing an overpack container (a separate requirement), and at the hearing the Licensee repeated this claim.⁸⁴

The Licensee acknowledged its awareness of the requirement for blocking and bracing. It also indicated that certain common carriers did not block or brace or otherwise secure overpack containers. And it described an alternative method that it had been using to achieve the same result as blocking and bracing.

A licensee is not free to substitute its own method of achieving a result for one prescribed by regulation. We do not have an adequate record to determine whether the method used by the Licensee satisfactorily achieves the purposes sought by the requirement for blocking and bracing. But even if we did, we are not free (as the Licensee is not free) to ignore regulatory requirements. It is clear to us that the requirement for blocking and bracing has safety significance. Indeed, it appears that a failure to adhere to such requirement would fall within either of two criteria, both of which are currently evaluated as Severity Level III:

Violations of NRC transportation requirements involving for example:

3. Any noncompliance with . . . loading . . . requirements that could reasonably result in the following:

c. Substantial potential for personnel exposure or contamination

{or}

5. Breakdown in the licensee's program for the transportation of licensed material . . . [i.e., the criteria relied on by the Staff in its Civil Penalty Order].

As indicated earlier, the Staff would have evaluated this violation alone (at the time it occurred) as either Severity Level III or IV and, because of the open truck door, considered it to be a Severity Level III violation.⁸⁵

Based on these criteria and the admissions of the Licensee to the Staff, we have no doubt that the routine failure to brace and block in itself could be categorized as Severity Level III or IV, irrespective of the efficacy of the alternate method utilized.

⁸⁴ Tr. 417-19 (J. Moss); Tr. 420-21 (P. Moss).

⁸⁵ Tr. 337-38 (DelMedico).

(d) The Six Less-Significant Violations

There are six remaining violations that the Staff (in response to Board inquiries at the hearing) characterized as Severity Level IV or V. They may be summarized as follows:

2a. Radiation exposure records for six radiographers covering the period from May 1989 through July 1989 indicated that personnel monitoring devices had been damaged and could not be analyzed. As of October 2, 1989, the Licensee had not performed evaluations to determine the radiation exposure received by the six individuals. This was classified by the Staff at the hearing as a Severity Level IV violation.⁹⁶

2b. The Licensee failed to obtain radiation exposure information concerning the current quarterly occupational dose received by two radiographers prior to assigning them work in restricted areas. This was alleged to be a repeat violation. The Staff classified this as a Severity Level IV violation at the hearing.⁹⁷

2c. The Licensee allowed an individual to receive an occupational radiation dose in excess of certain specified regulatory standards without having Form NRC-4 signed by the individual to certify the completeness of the record of accumulated dose. This was said to be a repeat violation that, at the hearing, the Staff classified (when standing alone) as Severity Level V.⁹⁸

4a. On October 2, 1989, a Licensee representative transported two exposure devices containing iridium-192 in packages bearing "Radioactive Yellow II" labels that did not specify the identity and activity of the radionuclide. This was classified as a Severity Level IV violation at the hearing.⁹⁹

4c. On October 2, 1989, a Licensee representative transported a source and carried shipping papers showing: (1) an incorrect transportation index for a package labeled "Radioactive Yellow II," and (2) incorrect package identification descriptions. This was classified at the hearing as a Severity Level IV violation.¹⁰⁰

4d. On October 2, 1989, a Licensee representative transported a package appropriately labeled "Radioactive Yellow II" in a vehicle bearing a "Radioactive" placard. Such vehicle labeling is reserved for packages bearing the "Radioactive Yellow III" label. At the hearing, the Staff classified this violation as Severity Level IV.¹⁰¹

The Staff presented evidence on the safety significance of each of these less-significant violations. Most persuasive was its connection of some of

⁹⁶Tr. 335 (DelMedico).

⁹⁷Tr. 335 (Cain).

⁹⁸*Id.* The Staff added that, because of repetition, the violation here might be regarded as Level IV.

⁹⁹Tr. 337 (DelMedico).

¹⁰⁰Tr. 338 (DelMedico).

¹⁰¹*Id.*

the paperwork violations to the assurance that exposures to radiographers do not exceed regulatory limits.¹⁰² On the other hand, the importance of the overplacarding violation — i.e., (b) conveying of accurate information in the event of a truck accident — appears no more than marginal.

(e) *Aggregation of Violations*

As indicated previously, the Staff determined that all of the foregoing violations, considered collectively, represent a "significant regulatory concern" resulting from a "lack of management control of the program" that equates to a breakdown that, in the aggregate, meets the criteria for a Severity Level III violation. The Staff reached this conclusion without first determining the severity level of each violation individually.¹⁰⁴ The Staff based this action on its determination that they all stem from the same root cause, the lack of attention to compliance with NRC requirements. The Staff made no broader inquiry into the overall operation of the Licensee's program.¹⁰⁵

We reiterate that, in this case, the Staff did take into account both the number and the significance of the violations. We stress that the significance of the individual violations — considered alone — is important, because a number of violations that are extremely minor in nature might be insufficient to establish a programmatic breakdown that rises to a Severity Level III violation. However, the relatively large number of violations in this case, together with the significant safety aspects of some of them and their similarity in certain instances to earlier violations, clearly constitutes a sufficient programmatic breakdown to fall within the scope of a Severity Level III violation as denominated by the Enforcement Policy. The circumstance that some of the individual violations, in themselves, could be evaluated as Severity Level III lends even more credence to this determination.

Two additional observations are in order. First, one of the Licensee's most forceful assertions is that the NRC Inspector (Ms. Kasner) at the exit interview indicated in substance that "[t]he infractions are of the Level IV and V category" and did not constitute fineable offenses.¹⁰⁶ The record does not clearly support that assertion. Rather, it appears that Ms. Kasner may have advised the Licensee that many of the violations were of that nature but that some were more significant and that collectively they represented a management oversight problem.¹⁰⁷ Ms. Kasner clearly indicated that she also advised the Licensee that

¹⁰² Cain, ff. Tr. 123, at 18.

¹⁰³ *Id.* at 22-23.

¹⁰⁴ Tr. 313, 316, 345-46 (DelMedico); DelMedico, ff. Tr. 173, at 25, 26.

¹⁰⁵ Tr. 304-05 (Cain).

¹⁰⁶ Licensee POF at 4; see also Tr. 455 (P. Moss).

¹⁰⁷ Tr. 145-46 (Kasner).

she did not have final authority to assign severity levels to violations¹⁰⁸ and that there was a possibility that NRC management might accord significance to the "number and the common nature" of the violations.¹⁰⁹

Second, in transmitting the Civil Penalty Order to the Licensee, the Staff (through Hugh L. Thompson, Jr., Deputy Executive Director for Nuclear Materials Safety, Safeguards, and Operations Support) observed that "individually these violations do not normally rise above Severity Level IV"¹¹⁰ This communication was unfortunate, particularly insofar as it created the impression that the Staff was attempting to "pile on" unimportant deviations to create a violation for which it could assess a civil penalty. As we have seen, this was not the case, given the individual significance of some of the violations.

The elements of a sound radiation safety program presented by Tulsa — to be discussed later, in conjunction with escalation — do not detract from the fact that a number of serious violations were in fact committed. Based on these considerations, we find no abuse of discretion by the Staff in determining that, in the aggregate, a Severity Level III violation occurred. For that reason, we are upholding the Staff's determination in this respect. A civil penalty is warranted unless some mitigating facts exist.

As previously discussed, the base civil penalty for a Severity Level III violation (involving operations, as in the case of five of the remaining alleged violations here) amounts to \$5,000.¹¹¹ In reviewing the Staff's assessment of the civil penalty here, we begin with that figure.

6. Escalation

As set forth earlier, the Staff escalated its base civil penalty of \$5,000 by 75%. The escalation was based on the Licensee's prior notice of similar events or problems and its poor prior regulatory performance.

The prior notice and poor prior performance cited by the Staff related largely to the violations that were not the most serious — the paperwork discrepancies, and to general notices concerning management's attention to details. In contrast, the three most-serious violations described above were first-of-a-kind and not specifically the subject of prior notice. Beyond that, as pointed out previously, those serious violations stemmed from the improper performance

¹⁰⁸ Tr. 145 (Kasner); Tr. 438-39 (J. Moss). See also Tr. 151 (Cain).

¹⁰⁹ Tr. 150, 358 (Kasner).

¹¹⁰ Staff Testimony at A12-1.

¹¹¹ As set forth earlier, the base Level III civil penalty for transportation violations (of which there were four, including one of the more significant) is \$2,500. A good argument could be made that the base of an aggregated violation should represent a weighted average of the aggregated violations — here, \$4,000. However, because the six original and five remaining operations violations (including two of the more serious) in themselves amount to a Severity Level III violation, we are utilizing the \$5,000 base civil penalty for the Level III violations here.

of a single radiographer, whose credentials clearly qualified him for his position and whose performance on the job had previously been monitored and found acceptable.¹¹² In contrast to this one radiographer, Tulsa routinely employed twenty radiographers,¹¹³ with no serious apparent violations attributed to any but this one.¹¹⁴ Finally, there were no excessive radiation exposures attributable to any of these violations.¹¹⁵

The Staff's reliance on poor prior regulatory performance as a ground for escalation was based in large part on paperwork-type violations identified in an inspection conducted in November 1988.¹¹⁶ To respond to this position, the Licensee demonstrated that it has had a functioning radiation safety program that includes measures, some in excess of regulatory requirements, to strengthen the safety of radiographic operations. Specifically:

- (1) The Licensee regularly assigns two radiographers to each job for safety reasons, even though not obligated by NRC to do so.¹¹⁷
- (2) Tulsa utilizes an Assistant Radiation Safety Officer in addition to the requisite Radiation Safety Officer, even though not required to do so.¹¹⁸
- (3) The Licensee exercises management oversight to personally ensure that complete radiation report records are kept.¹¹⁹
- (4) The Licensee conducts quarterly field inspections of its radiographers to ensure that safe practices are being used.¹²⁰
- (5) The Licensee conducts regular radiation safety meetings with employees where specific radiological safety practices are discussed. It orders correction in the behavior of nonconforming employees.¹²¹
- (6) Licensee has in place and communicates to employees a company policy for employees to work safely, in conformance with NRC requirements. Employees are not to work under unsafe conditions even if a client is lost as a result.¹²²

Additionally, although not an excuse for the violations, the Licensee had made affirmative prior efforts to obtain the information on employee radiation

¹¹² Tr. 179 (Kasner), Tr. 416 (J. Moss).

¹¹³ Staff Testimony, II, Tr. 123, at A5-6 (item 3).

¹¹⁴ During the inspection that gave rise to the violations in this case, the Staff inspected the activities of another radiographer and was satisfied with his performance. Tr. 264-65 (Kasner).

¹¹⁵ Tr. 153 (Cain), Tr. 397 (J. Moss).

¹¹⁶ Staff Exh. 2.

¹¹⁷ Tr. 408 (J. Moss).

¹¹⁸ Tr. 322 (Cain).

¹¹⁹ Tr. 412 (J. Moss).

¹²⁰ Tr. 415-16, 457-59 (J. Moss).

¹²¹ Tr. 425-29, 443-44 (J. Moss, P. Moss).

¹²² Tr. 454 (J. Moss), Tr. 455-56 (P. Moss).

doses cited in Violations 2a, 2b, and 2c, but the records were incomplete at the time of the inspection.¹²³

Furthermore, with respect to the two repeat violations, the Licensee emphasized their relative lack of safety significance. In particular, Violation 2c (a Severity Level V violation)¹²⁴ asserted that Tulsa allowed an individual to receive an occupational radiation dose in excess of certain standards without having a form signed by the individual to certify the record of accumulated dose. The form had been completed by the Licensee, and the inspector verified that the accumulated dose was not in excess of regulatory standards. Nonetheless, the individual had not signed the form and, thus, Tulsa could not confirm that the record was correct in its entirety. Tulsa was therefore charged with a violation.¹²⁵ Although not specifically tied to this one violation, the Licensee indicated that radiographers occasionally work late-night shifts and, when they do, may not be contacted on a daily basis.¹²⁶ Further, the Staff indicated that there is no regulatory requirement for ongoing signatures after each exposure.¹²⁷

The other repeat violation (2b) involved the failure to obtain previous occupational exposure information for two individuals prior to assigning them to certain activities, a Severity Level IV violation.¹²⁸ Although more serious than the former, it nonetheless is not a significant violation.

Because of the relatively insignificant nature of the two repeat violations, we conclude that escalation of 75% in large part on the basis of these violations is excessive. Taking into account the many effective measures that Tulsa has adopted, the opinion of the Staff that Tulsa's radiation safety program is currently in basic compliance with regulatory requirements,¹²⁹ and the circumstance that the violations did not result in any excessive radiation exposure, we find escalation of no more than 20% (\$1,000) to be appropriate.

7. Mitigation

As noted earlier, the Staff mitigated the civil penalty by 25%, based on prompt corrective action for individual violations achieved by the time of the enforcement conference. The Staff declined to mitigate an additional 25%

¹²³Tr. 408-10 (J. Moss).

¹²⁴The statement in Staff Reply FOJ at 40 n.6, that the two repeat violations are "generally" classified as Severity Level IV, is misleading at best. A Staff witness characterized Violation 2c as "normally" Severity Level V, although he added that, because it was a repeat violation, it might have been regarded as Severity Level IV. Tr. 336 (Cain).

¹²⁵Tr. 383-84 (Kasner).

Tr. 410-11 (P. Moss).

¹²⁶Tr. 384-85 (Kasner, Cain).

¹²⁷Tr. 335 (Cain).

¹²⁸Tr. 143, 279 (DeMedico); Tr. 270 (Cain).

because Tulsa had failed to address properly the management issues cited by the Staff.

We find no basis for modifying the Staff's determination on mitigation. We are therefore approving mitigation in the amount of 25% (\$1,250).

8. Amount of Civil Penalty

In deriving the amount of the civil penalty we find appropriate, we reiterate our view that there should be a better system for denominating the value of individual violations than by treating each of the ten initial and nine outstanding violations as worth \$750 each, irrespective of their severity. Proper evaluation requires consideration not only of numbers of violations but, more important, their severity.¹³⁰ The record here, however, suggests no better way, and thus we are following that method in deleting an amount for the withdrawn violation.¹³¹

Other than the number and nature of the violations at issue here, we have seen no additional evidence of a general programmatic breakdown. More appropriate management practices would not likely have prevented the three most-serious violations from occurring, although they might have prevented the occurrence of certain of the less-serious paperwork violations. We note, with respect to several violations, the Licensee expressed some confusion as to the scope of specific regulatory requirements.¹³² Although not an excuse for the violations, it is an appropriate factor to consider in assessing the amount of a civil penalty.

Taking these considerations into account, we conclude that the base civil penalty should be \$5,000 (Severity Level III), that escalation of \$1,000 (20%) is appropriate, and that \$1,250 (25%) should be subtracted for mitigation. The civil penalty that should be imposed for all the ten initial alleged violations is therefore \$4,750. Reducing that by 10% (\$475) for the withdrawn violation, the net civil penalty that should be imposed is \$4,275.

V. CONCLUSIONS OF LAW

1. The Staff was correct in its conclusion that the violations under consideration here in the aggregate amount to a Severity Level III violation.

2. A base civil penalty of \$5,000, as sought by the Staff, is appropriate for such a violation or series of violations.

¹³⁰The Staff acknowledged that, in some cases involving multiple violations, the division of the total penalty among constituent parts has not been equal, where a violation was considered especially significant. Tr. 363 (DelMedico).

¹³¹The Staff evaluated this violation as Severity Level IV. Tr. 394 (DelMedico).

¹³²In particular, the display on vehicles of information identifying their cargo (Violation 4d) (Tr. 449-50 (J. Moss)) and the requirement for blocking and bracing (Violation 4b) (Tr. 422 (P. Moss, J. Moss)).

3. Contrary to the Staff conclusion, escalation of this penalty in the amount of no more than \$1,000 (20%) is warranted.

4. Mitigation in the amount of \$1,250 (25%) is warranted, as concluded by the Staff.

5. The calculated civil penalty should be reduced by 10% (\$475) representing the proportionate amount of the withdrawn violation (Violation 3).

6. A civil penalty of \$4,275 should be substituted for the \$6,750 sought by the Staff.

7. A civil penalty of \$4,275 should accordingly be assessed.

Order

Based on the foregoing opinion, including findings of fact, conclusions of law, and the entire record, it is, this 10th day of December 1991, ORDERED:

1. The Order Imposing Civil Monetary Penalty, dated June 6, 1990, is *modified* by substituting a civil monetary penalty of \$4,275 for the \$6,750 sought by the Order. A civil monetary penalty of \$4,275 is hereby *assessed* against the Licensee, Tulsa Gamma Ray, Inc.

2. This Initial Decision is effective immediately and, in accordance with 10 C.F.R. § 2.760 of the Commission's Rules of Practice, shall become the final action of the Commission forty (40) days from the date of issuance, unless any party petitions for Commission review in accordance with 10 C.F.R. § 2.786 or the Commission takes review *sua sponte*. See 10 C.F.R. § 2.786, as amended effective July 29, 1991 (56 Fed. Reg. 29,403 (June 27, 1991)).

3. Within fifteen (15) days after service of this Decision, any party may seek review of this Decision by filing a petition for review by the Commission on the grounds specified in 10 C.F.R. § 2.786(b)(4). The filing of a petition for review is mandatory for a party to exhaust its administrative remedies before seeking judicial review. 10 C.F.R. § 2.786(b)(1).

4. A petition for review shall be no longer than ten (10) pages and shall contain the information specified by 10 C.F.R. § 2.786(b)(2). Any other party may, within ten (10) days after service of a petition for review, file an answer supporting or opposing Commission review. The answer must be no longer than ten (10) pages and should concisely address the matters in 10 C.F.R.

§ 2.786(b)(2) to the extent appropriate. The petitioning party shall have no right to reply, except as permitted by the Commission.

THE ATOMIC SAFETY AND
LICENSING BOARD

Charles Bechhoefer, Chairman
ADMINISTRATIVE JUDGE

Dr. A. Dixon Callihan
ADMINISTRATIVE JUDGE

Bethesda, Maryland
December 10, 1991

CONCURRING OPINION OF JUDGE CALLIHAN

I agree with the conclusion of the Board's Decision whereby a civil penalty less than that sought by the Staff is imposed upon the Licensee. The principal allegation with which the Staff charged the Licensee is a breakdown of the management control of a licensed program. In my judgment, however, the Staff's demonstration of this breakdown, with which I reluctantly agree and the Board has accepted, is marginal at best.

The history of Tulsa's activities as an industrial radiographer — for example, the assessment of no previous monetary penalty, no record of excess radiation exposure to an employee or to a member of the public, no previous identification of a violation of regulations or license conditions more severe than Level IV — demonstrates a significant level of management control. In contrast, the October 1989 inspection of Tulsa, the subject of this proceeding, disclosed a number of alleged violations of which three had potential safety significance. The remaining six mainly concerned recordkeeping and "paperwork" deemed here to be of considerably lesser importance.

The result of this October 1989 inspection, while perhaps atypical, is not unprecedented, in that earlier inspections also cited a number of violations similar in both number and severity. The Staff advised that two of the 1989 violations were repetitious of earlier citations.

In retrospect, I would have preferred that the Staff charge the Licensee with one or more clearly delineated Level III violations, rather than lumping a number of irregularities of varying severity and importance in its arrival at the imposition of a civil penalty.

Notwithstanding the recorded fact that the three more-serious of the current violations can be attributed to a single errant radiographer no longer in the employ of the Licensee and that two-thirds of the recent accusations are of little consequence, I believe an employer must assume the responsibility for the behavior of its staff.

For these reasons, I conclude that Tulsa Gamma Ray's control of licensed activities can be strengthened and that the potential for improvement exists. Consequently, I do not join my dissenting colleague in effectively condoning the Licensee's management program and the manner in which it has met its responsibilities.

DISSENTING OPINION OF JUDGE KLINE

I respectfully disagree with my colleagues' decision to assess a civil penalty against the Licensee because I conclude that the Staff did not meet its burden of proof on the factual question of whether the admitted violations collectively constituted a programmatic breakdown in the Licensee's safety program. Succeeding on that burden was a vital element of the Staff's case and, with that failure, the Staff's enforcement theory supporting imposition of a civil penalty fails. The Board may not consider an alternative theory for which prior notice to the Licensee has not been given. Accordingly, I would dismiss the case against the Licensee without imposing a civil penalty.¹³³

My analysis begins with the Staff's letter to the Licensee imposing a civil penalty. The letter, dated June 6, 1990,¹³⁴ was signed by Hugh Thompson, Deputy Executive Director for Nuclear Materials Safety, Safeguards, and Operational Support, and was captioned "ORDER IMPOSING CIVIL MONETARY PENALTY — \$6,750." In the letter, the Deputy Director specifically agreed with the Licensee that the "violations do not normally rise above Severity Level IV" The letter nevertheless concluded that the violations in the aggregate were significant and it referred to the Staff's general concern for the risks of overexposure. The letter did not identify specific violations as cause for the Staff's concern.

The issues specified for hearing after a prehearing conference were as follows:

whether the amount of the penalty imposed was proper under the Commission's Enforcement Policy, i.e., whether it was correct to collectively classify Severity Level IV and V violations as a Severity Level III violation and impose a monetary penalty, and whether the amount of

¹³³I find the analysis set forth in *Hurley Medical Center* (One Hurley Plaza, Flint, Michigan), ALJ-87-2, 25 NRC 219, 224 (1987), applicable to this case.

¹³⁴Staff Testimony, ff. Tr. 793, Attach. 12.

the penalty was correctly arrived at taking into account the factors in the enforcement policy, including mitigating circumstances.

This statement was developed after consultation with the parties, and no one objected to it.¹³⁵

Additional notice of the Staff's enforcement theory in this case was given in a Board-ordered Staff letter of notice to Tulsa Gamma Ray, dated November 19, 1990. The Staff's letter stated in relevant part:

The violations, in the aggregate, have been classified as Severity Level III under Supplement IV, Section C.12 (Violations 2.a-2.c); Supplement V, Section C.5. (Violations 4a.-4d.); and Supplement VI, Section C.8 (Violations 1.a-1.b). These three provisions contain nearly identical language. Each refers to "a number of violations that are related . . . that collectively represent a potentially significant lack of attention or carelessness toward licensed responsibilities." In this case the NRC Staff believes that all of the violations are related because they stem from the same root cause, namely, a pattern of lack of attention to compliance with NRC regulatory requirements and carelessness toward licensed responsibilities by the RSO and management above the RSO. This pattern evidences a breakdown in the licensed program and control of the licensed activities of Tulsa Gamma Ray. . . .

The Staff restated these views in its profiled testimony.¹³⁶ All of the foregoing notices bind the Staff in the contested hearing and, absent a request for change, no alternative enforcement theory should be considered by the Board. The notices confirmed to the Licensee that the Staff regarded all of the violations as Severity Level IV or less and that the Staff intended to prove in the hearing that it was justified in aggregating the violations to a single Severity Level III violation on the basis of an alleged breakdown in licensed programs.

In each of the Supplements in the Enforcement Policy referred to by the Staff, the Severity Level III violation is specified as a breakdown in the licensed program, whether it be radiation safety, transportation, or fuel cycle and materials operations.¹³⁷ It is clear that, when the Staff invokes these sections, the essential fact that must be proved is that a programmatic breakdown occurred within one or more of the referenced activity areas.

In context, multiple related violations or significant lack of attention to licensed responsibilities are given in Appendix C, Supplements IV, V, and VI, as factors that are involved in a programmatic breakdown, but the word "involved"

¹³⁵ Prehearing Conference Memorandum and Order, LBP-90-42, 32 NRC 387 (1990); Memorandum and Order (Memorializing Prehearing Conference), LBP-90-43, 32 NRC 390 (1990).

¹³⁶ DelMedico, ff. Tr. 123, at 25-26, 29-30.

¹³⁷ Supplement VI, section C.8 refers to "breakdown in the control of licensed activities" rather than "breakdown in the radiation safety program" (Health Physics) or "breakdown in the licensee's program" (Transportation). No significant distinction among these descriptions of violations exists in the record and I see none. All three descriptions are included in my arguments and, for convenience, I refer to the violations collectively as a "programmatic breakdown" or a "breakdown in licensed programs."

is guidance. These factors are not defining criteria that are sufficient *per se* to establish such a breakdown. There must also be some basis established showing that the violations are more significant than marginal flaws in a functioning program. The violations collectively should support an inference that there has been a breakdown in the licensed program.

I conclude that, if the Staff chooses to take enforcement action under the authority cited to the Licensee, it incurs an obligation to show not only that multiple violations occurred, but also that collectively the violations impeach the licensed program. Where the Staff has inadequate evidence to meet this obligation, it may always choose to act on violations individually, with proper notice to the Licensee. Therefore, there was no essential regulatory goal in this case that could only be achieved by the approach adopted here.

Some of the violations were sufficiently serious to warrant a civil penalty individually. However, the Staff did not assign individual severity levels to each violation until requested to do so at the hearing. This was not timely notice to the Licensee. Therefore, the Board may not now uphold a civil penalty based on individual severity of some of the violations.

The record does not contain either an objective or an operational definition of what constitutes a programmatic breakdown. I take "program" to refer simply to the sum of actions required to control the licensed safety-related activities of the corporate Licensee. In this case, the scope of the licensed program encompassed the safety-related activities of twenty radiographers. *Webster's Third International Dictionary* defines "breakdown" (verb) in relevant part as follows: "to bring about loss of force or effectiveness; make ineffective; to become inapplicable or ineffective." And as a noun: "failure of operation; a condition marked by futile ineffectiveness; collapse, disintegration."¹³⁸

I conclude from those definitions that the Staff's burden under the enforcement policy and the theory it chose to pursue was to prove that the Licensee's corporate safety program was in a state of breakdown, i.e., that the program encompassed within one or more Supplements was substantially ineffective or that it was dysfunctional in whole or substantial part. For reasons stated, it was not sufficient to show only that some elements of the Licensee's program were flawed and in need of improvement under the enforcement theory chosen by the Staff.

Three of the violations, 1a, 1b, and 4b, were committed by one person and two were sufficiently significant to have been classified as Severity Level III in the first instance. The Staff, however, elected not to act on these violations individually but instead chose to pursue the enforcement theory discussed here. However, I agree with the majority that in this case the Licensee was not

¹³⁸ *Webster's Third New International Dictionary*, Unabridged, 272 (1986).

imprudent in hiring the offending radiographer and that prior inspections of his performance did not reveal erroneous behavior on his part. The evidence brought by the Staff shows only that a single radiographer performed poorly during a particular NRC inspection. No additional evidence suggests that there was a flawed corporate safety program which, if corrected, might have prevented this behavior. These violations, while individually serious, do not prove that there was a breakdown in the Licensee programs.

I do not propose that the Licensee in other circumstances could escape a civil penalty by arguing that it was not responsible for the acts of its employees. It clearly could not, but those circumstances are not presented under the Staff's enforcement notice. It is immaterial to my conclusion that some other enforcement theory based on individually severe violations arguably might have been upheld in a continuing proceeding.

The six remaining less severe violations have no collective characteristics suggesting that a breakdown in the licensed program occurred. I reject the Staff's assertion that the violations are collectively significant because they are related to management inattention or carelessness. Even if they are so related, and even if significant, they do not establish *per se* that a programmatic breakdown having Severity Level III safety significance occurred. Management carelessness could be a generic reason that accounts for any set of multiple violations, regardless of their safety significance. Lacking in this case is evidence linking violations that might afflict any program to a programmatic breakdown.

I conclude that the Staff presented sufficient evidence to establish only the existence of varying degrees of flawed regulatory performance by the Licensee. Under questioning, the Staff did not express serious reservations about the Licensee's overall safety program. The Licensee confessed on the record to flawed regulatory performance, but it presented testimony showing that it had a reasonably workable safety program in place. The Staff did not controvert the Licensee's assertions. On balance, I cannot conclude that something so severe as a breakdown in the Licensee's safety program occurred, even though there is demonstrated need for improved regulatory performance by the Licensee.

For the foregoing reasons, I conclude that the Staff failed to prove an essential element in its case against the Licensee under the enforcement theory it chose to pursue. We are without authority to adopt a different enforcement theory. The action called for, therefore, is to dismiss the case without assessing a civil penalty.

Dr. Jerry R. Kline
ADMINISTRATIVE JUDGE

APPENDIX A

VIOLATIONS ALLEGED

As set forth in the Appendix to the Order Imposing Civil Monetary Penalty,¹³⁹ the alleged violations for which a civil penalty is sought are as follows:

1. *Conduct of Licensed Activities at Temporary Jobsites*

- a. 10 CFR 34.43(b) requires that a survey with a calibrated and operable radiation survey instrument be made after each radiography exposure to determine that the sealed source has been returned to its shielded position. If the radiographic exposure device has a source guide tube, the survey must include the guide tube.

Contrary to the above, on October 2, 1969, a licensee radiographer failed to conduct a survey of the exposure device and source guide tube after any of four exposures observed by an NRC inspector.

- b. 10 CFR 34.42 requires that areas in which radiography is being performed shall be conspicuously posted as required by 10 CFR 20.203(b) and (c)(1). § 20.203(c)(1) requires that each high radiation area shall be conspicuously posted with a sign bearing the radiation caution symbol and the words: "CAUTION HIGH RADIATION AREA." As defined in 10 CFR 20.202(b)(3), "high radiation area" means any area, accessible to personnel, in which there exists radiation originating in whole or in part within licensed material at such levels that a major portion of the body could receive in any 1 hour a dose in excess of 100 millirem.

Contrary to the above, on October 2, 1969, the licensee's representatives failed, while conducting radiography, to post a high radiation area with a sign bearing the radiation caution symbol and the words: "CAUTION HIGH RADIATION AREA."

2. *Radiation Exposure Evaluations, Records and Reports*

- a. 10 CFR 20.201(b) requires that each licensee make or cause to be made such surveys as (1) may be necessary for the licensee to comply with the regulations in 10 CFR Part 20, and (2) are reasonable under the circumstances to evaluate the extent of radiation hazards that may be present. As defined in 10 CFR 20.201(a), "survey" means an evaluation of the radiation hazards incident to the production, use, release, disposal, or presence of radioactive materials or other sources of radiation under a specific set of conditions.

10 CFR 20.101(a) generally limits the permissible occupational exposure to the whole body to 1 1/4 rems per calendar quarter.

Contrary to the above, the radiation exposure records for six radiographers, covering the period from May 1989 through July 1989, indicated that personal

¹³⁹ Staff Testimony, H. Tr. 123, at A12-6 through A12-9 ("Restatement of Violations").

monitoring devices had been damaged and could not be analyzed, and, as of October 2, 1989, the licensee had not performed evaluations to determine the radiation exposure received by these six individuals.

- b. 10 CFR 20.102(a) specifies that each licensee shall require any individual, prior to first entry into the licensee's restricted area during each employment or work assignment under such circumstances that the individual will receive or is likely to receive in any period of one calendar quarter an occupational dose in excess of 25 percent of the applicable standards specified in § 20.101(a) and § 20.104(a), to disclose in a written, signed statement, either: (1) that the individual had no prior occupational dose during the current calendar quarter, or (2) the nature and amount of any occupational dose which the individual may have received during that specifically identified current calendar quarter from sources of radiation possessed or controlled by other persons.

Contrary to the above, as of October 2, 1989, the licensee had failed to obtain the required information concerning the current quarterly occupational dose received by two radiographers prior to assigning them work in restricted areas.

This is a repeat violation.

- c. 10 CFR 20.102(b) requires that before a licensee permits, pursuant to § 20.101(b), any individual in a restricted area to receive an occupational radiation dose in excess of the standards specified in § 20.101(a), the licensee shall obtain a certificate on Form NRC-4, or on a clear and legible record containing all the information required in that form, signed by the individual showing each period of time after the individual attained the age of 18 in which the individual received an occupational dose of radiation, and perform the dose calculations required by 10 CFR 20.102(b)(2).

Contrary to the above, the licensee allowed an individual to receive an occupational radiation dose in excess of the standards specified in 10 CFR 20.101(a), without having Form NRC-4 or other authorized record signed by the individual to certify the completeness of the record of accumulated dose. (The licensee had otherwise completed the form, and the inspector verified that the individuals' accumulated dose was not in excess of regulatory standards.)

This is a repeat violation.

3. *Inventory Control*

10 CFR 34.26 requires that each licensee conduct quarterly physical inventories to account for all sealed sources received and possessed under the license.

Contrary to the above, although the licensee had conducted quarterly physical inventories, such inventories failed to include iridium-192 sealed sources removed from radiography exposure devices and placed into source changers for storage. These sealed sources were still in the licensee's possession when the quarterly inventory was conducted. For example, the licensee did not account for two iridium-192 sealed sources, Serial Nos. 3031 and 3066, during quarterly inventories conducted on June 30, 1989 and September 30, 1989, respectively.

4. *Transportation of Licensed Material*

10 CFR 71.5(a) requires that each licensee who transports licensed material outside of the confines of its plant or other place of use, or who delivers licensed material to a carrier for transport, comply with the applicable requirements of the regulations appropriate to the mode of transport of the Department of Transportation (DOT) in 49 CFR Parts 170-189.

- a. 49 CFR 172.403 requires that each package of radioactive material labeled as "RADIOACTIVE YELLOW II" include the following information entered on the label: (1) the name of the radionuclide, (2) the content activity expressed in appropriate curie units, and (3) the transport index of the package.

Contrary to the above, on October 2, 1989, the licensee's representatives transported two exposure devices containing iridium-192 sealed sources in packages that had "RADIOACTIVE YELLOW II" labels without having the required information on the labels.

- b. 49 CFR 177.842(d) requires that radioactive material packages be so blocked and braced that they cannot change position during conditions normally incident to transportation.

Contrary to the above, on October 2, 1989, the licensee's representatives transported Amersham Model 683 exposure devices, containing iridium-192 sealed sources, in the required overpack without having blocked or braced the package within the vehicle's darkroom where it is routinely placed for transport.

- c. 49 CFR 172.200 requires that each person who offers a hazardous material for transportation shall describe the hazardous material on the shipping paper in the manner required by Subpart C of 49 CFR 172. Subpart C, § 172.203(d) describes the required entries for radioactive material, including the transport index assigned to each package bearing RADIOACTIVE YELLOW-II or RADIOACTIVE YELLOW-III labels and, for a package approved by the U.S. Nuclear Regulatory Commission (USNRC), a notation of the package identification marking.

Contrary to the above:

- (1) On October 2, 1989, the licensee's representative carried shipping papers incorrectly showing a transport index (T.I.) of 1.8 for a package bearing a RADIOACTIVE YELLOW II label that the NRC inspector determined to have a T.I. of 0.5.
 - (2) On October 2, 1989, the licensee's representative carried shipping papers with package identification descriptions that did not correspond with the markings on the package, and the package was approved by the USNRC. Further, the package descriptions on the licensee's standard shipping papers did not correspond with any packages possessed by the licensee.
- d. 49 CFR 172.502(a) states, with exceptions not applicable here, that no person may affix or display on a transport vehicle any placard unless the placard represents a hazard of the material being transported.

49 CFR 172.504 prescribes the requirements for placarding vehicles used to transport hazardous materials. Specifically, Table 1 specifies that the "RADIOACTIVE" vehicle placard applies only to transport vehicles containing packages of radioactive material bearing the "RADIOACTIVE YELLOW III" label.

Contrary to the above, on October 2, 1989, the licensee's representative transported a package appropriately categorized and labeled as "RADIOACTIVE YELLOW II" in a vehicle bearing a "RADIOACTIVE" placard. No packages labeled as "RADIOACTIVE YELLOW III" were present in the vehicle.

These violations have been categorized in the aggregate as a Severity Level III problem. (Supplements IV, V, and VI.)

Cumulative Civil Penalty — \$7,500 (assessed equally among the 10 violations).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Morton B. Margulies, Chairman
Richard F. Cole
Frederick J. Shon

In the Matter of

Docket No. 70-3070-ML
(ASLSP No. 91-641-02-ML)
(Special Nuclear Materials License)

LOUISIANA ENERGY SERVICES, L.P.
(Calborne Enrichment Center)

December 19, 1991

RULES OF PRACTICE: ADMISSION OF CONTENTIONS

The Commission looks to the petitioner to fulfill the requirements of 10 C.F.R. § 2.714(b)(2)(i), (ii), and (iii). Should any of the requirements not be met, the contention must be rejected.

RULES OF PRACTICE: ADMISSION OF CONTENTIONS

Section 2.714(b)(2) of 10 C.F.R. is satisfied where a petitioner has reviewed the pertinent portions of the application and specifically points out where petitioner differs with the applicant on the adequacy of the information provided, explains why the application is deficient, and identifies the factual information upon which it intends to rely.

RULES OF PRACTICE: ADMISSION OF CONTENTIONS

A regulatory guide can be relied upon to support a contention alleging that an application is deficient. However, this is not accomplished by the mere reliance

on a Staff letter to an applicant which requests additional information based on a regulatory guide citation. An adequate explanation is required from the petitioner.

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTIONS

There is no agency requirement that bases for a contention must be original with the petitioner.

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTIONS

It is improper to support a contention based upon a Staff letter seeking information on thirty-six numbered requests, when neither the Staff nor the petitioner has provided an explanation as to how the requests are relevant to the contention. Such a proffer is wholly unacceptable.

MEMORANDUM AND ORDER **(Ruling on Contentions)**

I. INTRODUCTION

The matter for decision before the Board is the admissibility of contentions filed by Citizens Against Nuclear Trash (CANT) on October 3, 1991, pursuant to 10 C.F.R. § 2.714(b). The admission of a single contention would permit Petitioner to participate as a party to the application proceeding, 10 C.F.R. § 2.714(b)(1). The application, if granted, would permit Louisiana Energy Services, L.P. (LES), to construct and operate a plant near Homer, Louisiana, for the enrichment of natural uranium to a maximum of 5% U-235 by the gas centrifuge process. The facility would be called the Claiborne Enrichment Center (CEC). In a Memorandum and Order, dated July 16, 1991 (unpublished), the Board found that CANT had established standing under 10 C.F.R. § 2.714(a)(2), and permitted it to file contentions.

On October 25, 1991, LES filed an answer opposing all of the subject contentions. NRC Staff (Staff), in a response of November 4, 1991, opposed a majority of the contentions but did not oppose others. The Board heard arguments on the contentions at a prehearing conference on November 14, 1991. In this Memorandum and Order we rule on the admissibility of the contentions and CANT's status as a party.

II. STANDARDS FOR CONTENTIONS

An admissible contention must meet the requirements of 10 C.F.R. § 2.714(b)(2), amended by the Commission on August 11, 1989, which provides:

(2) Each contention must consist of a specific statement of the issue of law or fact to be raised or controverted. In addition, the petitioner shall provide the following information with respect to each contention:

(i) A brief explanation of the bases of the contention.

(ii) A concise statement of the alleged facts or expert opinion which support the contention and on which the petitioner intends to rely in proving the contention at the hearing, together with references to those specific sources and documents of which the petitioner is aware and on which the petitioner intends to rely to establish those facts or expert opinion.

(iii) Sufficient information (which may include information pursuant to paragraphs (b)(2)(i) and (ii) of this section) to show that a genuine dispute exists with the applicant on a material issue of law or fact. This showing must include references to the specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief. On issues arising under the National Environmental Policy Act, the petitioner shall file contentions based on the applicant's environmental report. The petitioner can amend those contentions or file new contentions if there are data or conclusions in the NRC draft or final environmental impact statement, environmental assessment, or any supplements relating thereto, that differ significantly from the data or conclusions in the applicant's document.

Further, 10 C.F.R. § 2.714(d)(2) provides that contentions shall not be admitted (i) if the contention and supporting material fail to meet the requirements of section 2.714(b) or (ii) if, should the contention be proven, it would be of no consequence in the proceeding because it would not entitle petitioner to relief.

In its comments on the amendments to 10 C.F.R. § 2.714 the Commission stated:

In addition to providing a statement of fact and sources, the new rule will also require intervenors to submit with their list of contentions sufficient information (which may include the known significant facts described above) to show that a genuine dispute exists between the petitioner and the applicant or licensee on a material issue of law or fact. This will require the intervenor to read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, and to state the applicant's position and the petitioner's opposing view. When the intervenor believes the application and supporting material do not address a relevant matter, it will be sufficient to explain why the application is deficient.

54 Fed. Reg. 33,170 (1989).

The Commission noted the amended version's consistency with *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-687, 16 NRC 460, 468

(1982), *rev'd in part on other grounds*, CLI-83-19, 17 NRC 1041 (1983), where the Appeal Board stated:

[A]n intervention petitioner has an ironclad obligation to examine the publicly available documentary material pertaining to the facility in question with sufficient care to enable [the petitioner] to uncover any information that could serve as the foundation for a specific contention. . . . Neither Section 189a of the [Atomic Energy] Act nor Section 2.714 of the Rules of Practice permits the filing of a vague, unparticularized contention, followed by an endeavor to flesh it out through discovery against the applicant or staff.

The amended regulations are also consistent with the Commission's long-standing practice that requires that a contention be rejected if:

- (1) it constitutes an attack on applicable statutory requirements;
- (2) it challenges the basic structure of the Commission's regulatory process or is an attack on the regulations;
- (3) it is nothing more than a generalization regarding the petitioner's view of what applicable policies ought to be;
- (4) it seeks to raise an issue which is not proper for adjudication in the proceeding or does not apply to the facility in question; or
- (5) it seeks to raise an issue which is not concrete or litigable.

Philadelphia Electric Co. (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20-21 (1974).

The Commission looks for the Petitioner to fulfill the requirements of 10 C.F.R. § 2.714(b)(2)(i), (ii), and (iii). In *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC 149, 155 (1991), the Commission stated:

While the Board may appropriately view Petitioners' support for its contention in a light that is favorable to the Petitioner, it cannot do so by ignoring the requirements set forth in 10 C.F.R. § 2.714(b)(2)(i), (ii), and (iii). These sections demand that all petitioners provide an explanation of the bases for the contention, a statement of fact or expert opinion upon which they intend to rely, and sufficient information to show a dispute with the applicant on a material issue of law or fact. If any one of these requirements is not met, a contention must be rejected. Rules of Practice for Domestic Licensing Proceedings — Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989).

III. DISCUSSION

The Board has fully reviewed and considered "Citizens Against Nuclear Trash's Contentions on the Construction Permit/Operating Licensing Applications for the Claiborne Enrichment Center," filed October 3, 1991, LES's answer

dated October 25, 1991, and Staff's response of November 4, 1991, along with the prehearing conference record of November 14, 1991, and the prior record in the proceeding. Based upon all of the foregoing we make the following findings.

The Contentions

Contention A. No Waste Disposal Plan

LES does not have a plan for the disposal of the approximately 300 14-ton cylinders of radioactive and toxic depleted uranium the facility will generate per year.

CANT withdrew Contention A at the November 14, 1991 prehearing conference. The Board, with the agreement of LES and Staff, permitted the addition of the bases of Contention A to Contention B.

Contention B. Decommissioning Plan Deficiencies

The LES decommissioning plan does not provide reasonable assurance that the CEC site can be cleaned up and adequately restored upon cessation of operations.

The contention is supported by six separately stated bases in addition to others added from withdrawn Contention A.

The focus of the original six bases is that LES does not currently have a plan for disposal of depleted uranium tails and there is no rational basis provided for the decommissioning costs in LES's decommissioning cost estimate.

For its first basis, CANT asserts that LES in its Safety Analysis Report (SAR) (Table 11.8.2) states that UF_6 tails disposal costs are estimated at \$9.5 million per year of tails production, but, because Applicant does not have a plan for the offsite disposal of tails, there is no realistic basis for the estimate. CANT asserts that these figures conflict with those in the "LES CEC Depleted UF_6 Disposition Study" of September 1990, which is cited in support of the license application.

CANT takes issue with Applicant's consideration of depleted uranium as a marketable resource rather than as a waste product. CANT claims that as a waste product it will increase the cost estimates of decommissioning.

Petitioner relies on a newspaper article that states that the Department of Energy sometimes gives away UF_6 . Also, it cites a Department of Energy draft study that characterizes depleted uranium as a "mixed waste," which raises disposal problems because of the unavailability of disposal sites. CANT also alleges that there will be a lack of low-level waste sites, which will impact negatively on decommissioning costs.

In its second basis, CANT contends that the application should be rejected because it does not provide reasonable assurance that LES knows how the uranium tails will ultimately be disposed of or how much it will cost.

For its third basis, CANT claims that the decommissioning plan contains no concrete information about the amount of payments LES is expected to make into the external trust that LES claims it is setting up. Cited in support of the requirement is 10 C.F.R. § 70.25.

In basis four, CANT alleges that LES provides no details on how the decommissioning costs were determined. It relies on a June 25, 1991 letter from the Chief, Fuel Cycle Safety Branch, in which he seeks additional information pertaining to the application. He relies on requirements in Regulatory Guide 3.66, "Standard Format and Control of Financial Assurance Mechanisms Required for Decommissioning Under 10 C.F.R. Parts 30, 40, 70, and 72." Additionally, CANT discusses an alleged lack of information in several specific areas. Petitioner requests that Applicant be made to explain the derivation of its estimated costs in order to assure that there is a rational basis for the decommissioning costs. CANT incorporates the June 25, 1991 letter into the bases by reference.

Basis 5 is an allegation that LES decommissioning costs do not indicate what facilities will be decontaminated and to what extent.

In Basis 6, CANT asserts that in the June 25, 1991 letter, Staff identified a number of deficiencies in LES's decommissioning cost estimates, and, to the best of Petitioner's knowledge, LES has not responded to the question. Again, CANT incorporates the letter by reference but more specifically the pages dealing with the decommissioning funding plan.

The bases submitted under withdrawn Contention A allege that: LES has submitted no plan for the disposal of the uranium tails to be generated annually; the tails are mixed waste and must be disposed of under the Resource Conservation and Recovery Act; LES has not submitted a disposition plan that is either concrete or realistic; that before a license can be obtained, LES must submit a plan for disposal of the uranium tails which fully complies with all applicable environmental laws.

The Board finds that CANT has satisfied the requirements of section 2.714(b) for the admission of Contention B to the extent indicated below. The contention, which states that the LES decommissioning plan does not provide reasonable assurance that the CEC site can be cleaned up and adequately restored upon cessation of operations, is admitted insofar as it challenges the reasonableness of LES's decommissioning funding plan. CANT has provided adequate bases to support such a contention.

The NRC has no regulatory requirement that there must be a concrete plan for the disposal of the depleted uranium that the facility would generate each year and that, before a license may issue, such disposal plan must comply with all applicable environmental laws.

The Commission in noticing the application for hearing indicated that the applicable regulations only require that an applicant have a plausible strategy for the disposition of depleted uranium hexafluoride tails. Such strategies were

identified as including: storing, as a possible resource, uranium hexafluoride tails at the plant site; continuously converting uranium hexafluoride tails to uranium oxide (or tetrafluoride) as a potential resource or for disposal; and a combination of both — onsite storage with conversion of uranium hexafluoride at the end of plant life. 56 Fed. Reg. 23,313 (May 21, 1991).

In licensing matters the hearing notice published by the Commission for the proceeding defines the scope of the proceeding and thus binds this licensing board. *Northern Indiana Public Service Co.* (Bailly Generating Station, Nuclear-1), ALAB-619, 12 NRC 558, 565 (1980); *Commonwealth Edison Co.* (Carroll County Site), ALAB-601, 12 NRC 18, 24 (1980).

The regulations do require that an applicant submit a decommissioning funding plan which must contain a cost estimate for decommissioning. 10 C.F.R. § 70.25(a) and (c). Cost estimates may be adjusted periodically over the life of the facility. For the regulation to have meaning, the cost estimate should contain reasonable estimates for an adequately described decommissioning strategy.

CANT has satisfied the requirements of 10 C.F.R. § 2.714(b)(2)(i), (ii), and (iii) in its allegation that the decommissioning funding plan does not contain reasonable estimates for decommissioning nor does it adequately describe the underlying decommissioning strategy.

As required, CANT reviewed the pertinent portions of the application and specifically pointed out where it differed with LES on the adequacy of the information provided. Explanations were offered why the application was deficient. Petitioner identified the factual information on which it intends to rely. Bases 1, 4, and 5 adequately support the contention. Sufficient information was provided to show that a genuine dispute exists with the Applicant on material facts.

Regulatory Guide 3.66, like all regulatory guides, describes methods acceptable to the Staff for implementing regulations. Equivalent methods are also acceptable to Staff. Although regulatory guides are not binding as regulations, they reflect the considered judgment of Staff and offer insight on what is needed to satisfy a regulation. Regulatory guides have been recognized as evidence of legitimate means for complying with regulatory requirements. *Carolina Power and Light Co.* (Shearon Harris Nuclear Power Plant), ALAB-852, 24 NRC 532, 544-45 (1986).

A regulatory guide can be relied on to support a contention alleging that an application is deficient. However, this is not accomplished by the mere reliance on a Staff letter to an applicant which requests additional information based on a regulatory guide citation. An adequate explanation is required from the Petitioner. The Commission in its comments on the amendments to 10 C.F.R. § 2.714, stated, "When the intervenor believes the application and supporting material do not address a relevant matter, it will be sufficient to explain why the application is deficient." 54 Fed. Reg. 33,170 (1989).

CANT has satisfactorily met this requirement. The information in the letter provided CANT with a starting point. Petitioner went on to explain how the alleged inadequacies support its contention and provided additional information in support (Bases 1, 4, and 5).

Contrary to an argument made at the prehearing conference, there is no agency requirement that bases must be original with the petitioner.

In admitting the contention, we placed no reliance on the CANT notion that the uranium hexafluoride tails produced in operating the CEC constitute "mixed waste" under the Resource Conservation and Recovery Act (RCRA) and hence constitute a type of waste for which there are presently no disposal sites. To support this notion, CANT offers a draft of a Department of Defense (DOD) document, "Managing DOD's Growing Environmental Responsibility," Mar. 29, 1991 (Draft Version 13), in which DOD, noting that some of the department's equipment uses depleted uranium, says that "[t]he depleted uranium will cause serious disposal problems for the Department because 'mixed waste' sites for this doubly hazardous material do not exist in the United States."

At the prehearing conference, CANT also offered a letter from the Environmental Protection Agency (EPA) on the subject of "Guidance on the Definition and Identification of Commercial Mixed Low-Level Radioactive and Hazardous Waste and Answers to Anticipated Questions" with attached guidance (EPA Guidance). *FF. Tr. 63*.

Both the Staff and Applicant argue that depleted uranium hexafluoride is not "mixed waste" under RCRA. Applicant asserts (as does the Staff) that depleted uranium is "source material" under the definition of "source material" in 10 C.F.R. § 40.4, and that "source material" includes compounds of uranium in any chemical or physical form. Both further argue that source material is expressly excluded from regulation as hazardous waste by RCRA and by EPA regulations.

We observe that the very guidance that CANT introduced into the transcript agrees with the position of the Staff and Applicant. The EPA Guidance says "RCRA also excludes source, special nuclear, and byproduct materials from the definition of hazardous waste and, therefore, from regulation under EPA's RCRA Subtitle C program." *FF. Tr. 63 at 8*.

It thus appears that NRC regulations, EPA regulations, the statutory foundations of those regulations, and the guidance jointly developed by NRC and EPA (indeed, one of the two documents relied upon and introduced by CANT itself) all agree that depleted uranium hexafluoride is not "mixed waste." The only opinion arguing in favor of that classification for the material is an unsigned, undocumented, unauthoritative intermediate draft by someone in an agency not charged with enforcement of either of the statutes that the definition would involve. The DOD opinion seems to us to be a voice crying in the wilderness. Recognizing that great deference is due to an agency's interpretation of its own regulations and its organic statutes, we see no reason to believe that the de-

pleted uranium hexafluoride tails would be classified as mixed waste and would therefore be a material for which no disposal site is available.

Having found that Bases 1, 4, and 5 support the contention, we further find that Bases 2, 3, and 6 do not, nor do the bases transferred from Contention A.

Basis 2 is premised on the erroneous conclusion that LES must have a concrete plan for the disposal of the tails.

Basis 3 is too vague and indefinite to support a contention.

Basis 6 provides no explanation as to why the application is inadequate. It merely relies on the Staff letter of June 25, 1991.

The bases transferred from withdrawn Contention A are premised on the erroneous conclusion that Applicant must have at this time a concrete disposal plan for the tails that meets all environmental laws and that the tails are a mixed waste disposable under RCRA.

Contention B is admitted to the extent described.

Contention C. Lack of Protection Against Worst-Case Accidents

The license application for the CEC violates NRC regulations and the National Environmental Policy Act in that it treats a number of reasonably foreseeable accidents as "not credible," and fails to fully evaluate their potential impacts on health and the environment, to protect against them in an adequate manner, or to provide adequate emergency response measures.

As bases for Contention C, CANT asserts that the Applicant improperly failed to consider seven specific accidents that it claims are "credible" and should have been considered under NEPA and/or the requirements imposed by the Commission's emergency planning regulations or the proposed general design criteria for uranium enrichment plants. The seven accidents (identified here as C.1 through C.7) that CANT asserts require further consideration are: (1) a cylinder rupture, (2) a worst-case criticality accident, (3) an autoclave rupture, (4) a storage-yard fire, (5) a transportation accident, (6) an airplane crash, and (7) a gas well explosion. Applicant opposes the contention and all its parts, maintaining that it fails to meet the requirements of 10 C.F.R. § 2.714(b)(2). Staff opposes admission of all parts of this contention except the criticality accident (C.2) and would restrict that to an assertion that Applicant has failed to evaluate credible criticality accidents and to provide criticality monitors at the facility as required by 10 C.F.R. § 70.24. For the reasons stated below, the Board denies the contention. Bases C.3 and C.7 were withdrawn by CANT at the prehearing conference. The Board considers Basis C.2 to be premature since the essence of that issue is currently under consideration by the Commission.

C.1. Cylinder Rupture

CANT's main argument appears to be that cylinder rupture accidents have occurred at two plants (Sequoyah and Portsmouth) and reliance on administrative controls to prevent such an accident is not adequate. CANT does not make any comparison of the design and operating procedures of those facilities with CEC and appears not to have considered the specific measures taken by Applicant to minimize or eliminate the possibility of the type of accidents that occurred at the Sequoyah Fuels uranium processing plant and the Portsmouth gaseous diffusion enrichment plant. CANT fails to demonstrate that the measures taken by Applicant are not adequate to avoid cylinder rupture accidents. Petitioner has not provided sufficient information to suggest that the accident should be treated as credible. Thus the proposed basis fails to meet the pleading requirements of section 2.714(b)(2).

C.2. Criticality Accident

This basis was originally captioned "worst-case criticality accident." At the prehearing conference, CANT modified this basis by removing reference to "worst case," acknowledging Applicant and Staff's position that NEPA does not require such worst-case analysis. The basis was further modified by merging it with Contention F which concerns the lack of criticality monitors. As modified, this basis would read "LES has failed to evaluate the health and environmental impact of criticality accidents because it believes they cannot occur. And on this ground, they have not provided criticality monitors at the CEC." Tr. 70.

There was no objection to the modification, but Applicant maintained its opposition to admission. The Staff would have the Board admit the basis but limit it to the issue that Applicant is not in compliance with the requirement to provide criticality monitors.

Apparently unknown at the time to CANT, Applicant applied for an exemption from the requirement to install criticality monitors on January 31, 1991, under 10 C.F.R. § 70.24(d). This preceded the May 21, 1991 publication of the Notice of Hearing and the assignment of this proceeding to the Board on May 23, 1991. The installation of criticality monitoring facilities is at the very heart of this contention and that issue is currently under consideration by the Commission. Depending upon Commission action on the exemption, there may or may not be an issue for litigation. It would be inappropriate for the Board to litigate an issue that is directly before the Commission. The Board considers Basis C.2 as premature and therefore it is denied, without prejudice.

C.3. Autoclave Rupture

Withdrawn. Tr. 77.

C.4. Storage-Yard Fire

At the prehearing conference, CANT withdrew offsite transportation accident aspects from Contentions C.4 and C.5, acknowledging that offsite aspects are covered under the generic aspects of 10 C.F.R. § 51.51(b), Table S-3. Tr. 80. As to the onsite aspects, CANT argues that LES is in error when it says that a storage-yard fire is not credible. The principal basis for the allegation is that LES proposes to avert such fires by the use of procedures that are vulnerable to human error. CANT further states that a single failure, i.e., fuel spill from a delivery truck, coupled with operator error (failure to follow procedures) and the lack of guaranteed prompt fire brigade action could result in a 30-minute (or longer) fire, which could rupture one or more uranium hexafluoride cylinders. Draft General Design Criteria, Advanced Notice of Proposed Rulemaking, "Regulation of Uranium Enrichment Facilities" (GDC), 53 Fed. Reg. 13,276-79 (1988).

Both Applicant and Staff would have the Board deny this basis, arguing that CANT is merely challenging the philosophy of relying on procedures to avert such a fire without stating any specific challenge to the Applicant's proposed methods of avoiding this type of accident. The basis fails to meet the section 2.714(b)(2) requirements for specificity because CANT has not indicated how LES fails to comply with the proposed GDC (particularly the prohibited 30-minute or longer fire), how the LES storage-yard fire analysis fails to meet the requirements, or how the various protection systems provided by LES, including several backup systems such as administrative controls, limited fuel tank sizes, yard drains, and redundant water supply tanks and pumps are inadequate. The Board agrees. Basis C.4 is denied.

C.5. Transportation Accident

As discussed under Basis C.4, CANT withdrew any offsite aspects of this contention. What remains is an onsite truck accident that would "necessarily involve a 30-minute fire." Applicant and Staff oppose the basis for the same reasons stated under Contention C.4. We find that CANT has failed to identify any deficiencies in Applicant's submittal concerning onsite transportation accidents and has provided no reason to believe that the Applicant's SAR is flawed in its conclusion that a transportation accident involving a 30-minute fire is not credible. Applicant's SAR analysis is based in part on NRC and Department of Transportation (DOT) analyses. The basis lacks the necessary specificity required under section 2.714(b)(2) and accordingly must be denied.

C.6. Airplane Crash

CANT argues that the current evaluation of the probability of an airplane using the Homer airport and crashing into the CEC site fails to take into account the expected increase in the use of the airport resulting from the construction and operation of the CEC enrichment plant. Applicant and Staff oppose the contention, arguing that CANT has not provided any factual basis in support of its view that increased use and additional risk is likely.

We find that CANT fails to provide any facts or expert opinion to support its basis, and fails to provide references to specific sources on which CANT intends to rely to establish any facts or expert opinion, as required by 10 C.F.R. § 2.714(b)(2)(ii). CANT has further not identified any omission of information required by law, simply stating that its basis for the need of additional analyses concerning airplane crash probabilities is common sense. Tr. 81. The basis lacks the necessary specificity and is denied.

C.7. Gas Well Explosion

Withdrawn. Tr. 81.

Contention D. Lax Attitude Toward Criticality Safety

The application for the CEC demonstrates a dangerously smug attitude toward serious accidents which raises the concern that LES' maintenance and operating procedures, training programs, and general corporate attitude may not contain a serious commitment to maintaining preparedness for a criticality accident.

The principal basis is an accidental criticality accident at a fuel fabrication facility operated by an unrelated company. (General Electric's Wilmington, North Carolina, fuel fabrication facility). CANT merely alleges that the lax attitude toward nuclear criticality apparently exhibited by GE is also the attitude of Applicant LES, and the entire management program should be reviewed and revised to incorporate a more realistic view toward criticality safety at the CEC. Applicant and Staff oppose admission of this contention.

We find that no nexus has been provided between the fuel fabrication facility and the proposed fuel enrichment plant or with LES, and no basis has been provided to support the view that LES will exhibit a lax attitude toward criticality safety. The contention must be rejected pursuant to section 2.714(b)(2).

Contention E. Cylinder Rupture

The applicant fails to meet the requirements of 10 C.F.R. § 20.105 or Appendix B to Part 50 in the event of an accident involving the rupture of uranium hexafluoride cylinder.

Thus, the applicant also fails to provide reasonable assurance of adequate protection of public health and safety, as required by 10 C.F.R. §§ 40.32 and 70.31(d).

This contention was withdrawn at the prehearing conference. Tr. 82.

Contention F. Lack of Criticality Monitors

The applicant violates 10 C.F.R. § 70.24 because it has failed to provide for criticality monitors at the CEC.

This contention was merged with Basis C.2 and denied, without prejudice, as being premature because an exemption to the requirement of providing criticality monitors is currently pending before the Commission. See discussion of Basis C.2, above.

Contention G. Inadequate Protection from Toxic Effects of UF₆

The plant boundary exposure limits for the CEC do not provide adequate protection of the public from toxic effects of uranium hexafluoride.

In this contention, CANT challenges the adequacy of the CEC's proposed limits for the protection of offsite persons against the toxic effects of uranium hexafluoride. The Notice of Hearing and Commission Order for the CEC specifies that, for the purpose of siting and design of the plant against accidental releases of uranium hexafluoride, the criteria in NUREG-1391, "Chemical Toxicity of Uranium Hexafluoride Compared to Acute Effects of Radiation," on limiting individual exposure to the chemical toxic effects of uranium hexafluoride, should be applied at the boundary of the CEC site under control of the Applicant. Applicant and Staff oppose the contention, both stating that it challenges the Commission's application of NUREG-1391 in establishing plant boundary exposure limits. CANT has already petitioned the Commission directly on this point in its comments to the Commission regarding the proposed standards for the CEC.

At the prehearing conference, CANT argued that the proposed standards are just that, they are proposed. It further argued that it was necessary to raise the matter before the Board and invoke the Board's general authority to protect the public's health and safety because there simply are no standards in effect. Tr. 83.

CANT's basic argument is that it believes that the exposure limits proposed in the LES license application and NUREG-1391 (which it agrees are comparable) are lax and do not adequately protect the public health and safety. The Board believes that CANT's attention is misplaced. Its argument is with the Commission. The Commission has directed what exposure limits should be applied and is currently considering the adoption of final standards in its

rulemaking proceeding, a proceeding in which CANT has already participated. Until final rules are published, the standards articulated in the Notice of Hearing and Commission Order are the appropriate standards. The hearing notice defines the scope of the issues in the proceeding. *Bailly*, ALAB-619, *supra*; *Carr:il County*, ALAB-601, *supra*. CANT has not demonstrated that Applicant's proposal is not in conformance with NUREG-1391, the applicable requirement. The contention is denied because it is contrary to the Commission order instituting the proceeding.

Contention H. Emergency Planning Deficiencies

The license application for the CEC does not provide a reasonable assurance that the public health and safety will be adequately protected in the event of an emergency at the plant.

As bases for this contention, CANT argues that LES has not complied with the Commission's GDC or the emergency planning regulation requirements of 10 C.F.R. § 70.22(i), as implemented by Draft Regulatory Guide DG-3005, "Standard Format and Content for Emergency Plans for Fuel Cycle and Materials Facilities" (September 1990). CANT then sets out twenty-three separately alleged deficiencies with many specifically referencing DG-3005.

Applicant opposes the contention and all of its bases. Staff does not oppose the contention but would limit it to Bases 2-10, 16-20, and 23, stating that these bases generally cite and/or rely upon DG-3005, and assert that the Applicant has failed to comply with this interim regulatory guidance.

In its statement of opposition to this contention, Applicant points out that emergency planning requirements of 10 C.F.R. Part 70 for special nuclear materials facilities (e.g., CEC), are not the same as 10 C.F.R. Part 50 planning requirements for power reactors. Referencing the Statement of Considerations supporting the emergency planning regulations for materials licensees, Applicant states that because exposure levels would be low as compared to protective action guide exposures used for nuclear power plants and because of the nature of the types of accidents of concern, there is no requirement for formal evacuation planning. 54 Fed. Reg. 14,052 (1989).

LES also argued that a request for information from Staff or reliance on a draft regulatory guide does not satisfy the pleading requirements of section 2.714(b).

At the prehearing conference, Applicant also pointed out that while it is going forward with an emergency plan, Commission regulations would not require it to do so. Tr. 96-92. Section 70.22(i)(1) of 10 C.F.R. states that an emergency plan is not necessary if an evaluation shows (1) the maximum dose does not exceed 1-rem effective dose equivalent and (2) does not involve an intake of more than 2 milligrams of soluble uranium. We will rule on the contention as it

was filed and responded to by LES on October 25, 1991. Applicant's claim that it qualifies for an exception under the regulation is a new matter not previously raised. Further, it apparently does not want to rely on the exception.

At the prehearing conference, CANT withdrew Bases 8, 18, and 19. Tr. 94.

Commission regulation 10 C.F.R. § 70.22(i)(3) sets forth the required emergency plan information that is to be contained in a materials license application. The areas it covers are: (1) facility description; (2) types of accident for which protective actions may be needed; (3) classification of accidents; (4) means of detection of accidents in a timely manner; (5) mitigation of consequences; (6) assessment of releases; (7) responsibilities of licensee if an accident occurs; (8) notification and coordination of offsite response organizations and the NRC; (9) information to be communicated to offsite response organizations and the NRC; (10) training to be provided to workers, and special instructions and tours to be given to offsite emergency personnel; (11) means for safe shutdown after an accident; (12) provisions for emergency exercises and communications checks with offsite response organizations; and (13) certification by the applicant that it has met its obligations under the Emergency Planning and Community Right-to-Know Act of 1986.

DG-3005, which CANT relies upon, states that it was being developed to provide guidance to Staff on the information to be included in emergency plans and was being issued in a draft form to involve the public in the early stages of the development of a regulatory position in that area. It had not received complete Staff review and does not represent an official NRC Staff position. DG-3005 at cover and 1.

The Board, in considering the admissibility of the contention, rejects Bases 1, 11 through 15, 21, and 22 for the reasons stated below.

Basis 1 merely incorporated by reference Staff's letter of June 25, 1991, to Applicant which contains questions relating to Staff's review. The letter is offered without explanation. The basis is rejected because it does not identify any specific deficiency in the application.

Bases 11 through 15 allege offsite emergency planning inadequacies (i.e., no specific guidelines for offsite protective actions, no offsite emergency planning zone, no plan for notifying people at a national forest or at a lake site, no plan to evacuate the elderly, and no plan to provide people within the emergency planning zone with information on appropriate procedures). The bases contain no reference to any regulatory requirements or DG-3005 and appear to be based on planning standards for nuclear reactors, which are considerably more stringent.

Additionally, Applicant's need for an emergency planning zone and the preparation of informational brochures for distribution to offsite populations was rejected by the Commission in its rulemaking proceeding. 54 Fed. Reg. 14,051, 14,057

(1989). These bases constitute an impermissible challenge to the Commission's regulations. For the foregoing reasons, Bases 11 through 15 are denied.

Basis 21 is denied for lack of specificity. It alleges that Applicant has not provided emergency plans for postulated accidents but does not say which accidents must be considered or what deficiencies exist in Applicant's submittal, which discusses a variety of postulated accidents and abnormal operational events. See section 2, CEC Emergency Plan.

Basis 22, which alleges that LES has failed to indicate how it plans to comply with sections 303(d) and 326(2)(B) of the Emergency Planning and Community Right-to-Know Act of 1986, with reference to a designated local emergency planning committee, is denied. All Applicant is required to do is certify compliance with the cited Act. Statements of Considerations, 54 Fed. Reg. 14,051 (1989).

As to Bases 2 through 7, 9, 10, 16, 17, 20, and 23, which LES opposes and Staff does not, we find that except for Basis 9 they offer to support the contention in accordance with the pleading requirements of section 2.714(b)(2), albeit minimally.

The bases cite DG-3005, except for Basis 23 which also relies upon it. Although a draft regulatory guide does not represent an official NRC Staff position, we view it as containing preliminary suggestions as to what is required by the regulation, and it is entitled to be afforded some weight, considering its source, in supporting a contention alleging inadequacies in the application.

Looking at these bases as a whole, we conclude that CANT had adopted the requirements of DG-3005 as its own. After examining the LES application, CANT contends that the application does not address specific relevant areas, or, in those instances where they were addressed, states why they were inadequate. We view this as a sufficient explanation as to why the application is deficient.

CANT had adequately apprised LES, in accordance with the pleading requirements, of its differences with the Applicant on the adequacy of the application on emergency planning. Petitioner has shown that a genuine dispute or material dispute exists that should be adjudicated.

Of the eleven bases that we find meet the pleading requirements, the following allege a failure of the Applicant to address emergency planning needs: Basis 2, identification of the location and emergency support organizations; Basis 3, listing of hazardous chemicals at the site and identifying communication centers; Basis 4, identifying types of radioactive materials accidents for which actions may be needed to prevent or minimize exposures; and Basis 10, describing government agencies' authority and responsibility in an emergency.

The following allege inadequacies in the information that was provided. Basis 5, inadequate details on notification of state authorities and NRC; Basis 6, unclear as to emergency response authority of crew and what facilities will be made available; Basis 7, failure to list some possible emergency response

organizations; Basis 16, failure to include a provision for projection of onsite radiation exposures; Basis 17, vague description of proposed measures for mitigating onsite consequences of accidents at the CEC; Basis 20, failure to plan for ensuring that equipment and instrumentation are in good working condition and that an adequate stock of supplies is maintained; and Basis 23, the emergency plan appendix lacks showing capability of emergency organizations to respond and that there are no agreement letters for organizations discussed in Basis 7.

Basis 9 is rejected because, contrary to CANT's assertion, the emergency plan does specify where the public and media can obtain reliable information during an emergency.

Contention H is litigable to the extent described above.

Contention I. Incomplete License Application

The license application for the CEC is incomplete in many major respects.

The basis for this contention is a March 21, 1991 Staff letter to Applicant which lists areas where the NRC seeks additional information as part of its review of the application. On the basis of this letter, CANT alleges that the application is incomplete in several respects. Applicant argues that the Staff letter does not constitute legal requirements and CANT has not pointed out any legal requirements. Applicant states that the mere reference to alleged omissions, without more, does not comport with the requirements of section 2.714(b)(2). Staff, while agreeing that the application is incomplete, nonetheless opposes admission of the contention for essentially the same reasons as Applicant. CANT contends that the application is deficient and before the facility can be licensed the deficiencies must be corrected.

The Board disagrees with Applicant and Staff. There appears to be no question that the application is deficient in at least some of the areas listed in CANT's contention. The main source of CANT's belief that the application is deficient (Staff's letter of March 21, 1991) is a reasonably reliable one as to a demonstration of relevant subject matter. CANT's review of Staff's letter coupled with its review of Applicant's filings, Staff's guidance documents, and Commission regulations constitutes more than just a mere listing of incomplete portions of the application. It is the Board's view that CANT has satisfactorily pointed out certain relevant deficiencies in the application and supporting material and has explained why it considers the material to be deficient. The contention is admitted but is limited to eleven (11) specific areas listed in CANT's contention as follows:

In the Environmental Report:

1. Environmental impacts of site preparation and construction;
2. monitoring data to support source-term determinations for gaseous effluents;
3. evaluation of means of reducing liquid effluent concentrations;
4. assessment of radiological impacts of plant operation;
5. environmental effects of accidents;
6. baseline data for preoperational effluent and environmental monitoring program; and
7. program to maintain releases as low as reasonably achievable (ALARA).

In the Safety Analysis Report:

8. Finalization of design features for earthquakes, tornadoes, and missiles;
9. quality assurance program for Class 1 equipment;
10. program for surveillance and maintenance of cylinders containing tails in interim storage; and
11. management and control program.

A twelfth area listed in CANT's filing involves nuclear criticality safety analyses and is related to matters pending before the Commission. This item is rejected as being premature. See discussion of Basis C.2 of Contention C, *supra*.

Contention J. Inadequate Assessment of Costs Under NEPA

The Environmental Report does not adequately describe or weigh the environmental, social, and economic impacts and costs of operating the CEC. Moreover, the benefit-cost analysis fails to demonstrate that there is a need for the facility. See, e.g., *Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2)*, ALAB-422, 6 NRC 33, 90 (1977) (in a power production plant licensing case, "need for power" is "a shorthand expression for the 'benefit' side of the cost-benefit balance which NEPA mandates"). On the whole, the costs of the project far outweigh the benefits of the proposed action.

Stating that the National Environmental Policy Act (NEPA) requires the NRC to fully assess the impacts of the proposed licensing action, and to weigh its costs and benefits, CANT alleges that LES's Environmental Report (ER) contains a brief "Benefit-Cost Analysis" that is slanted in favor of the benefits of the project and contains little discussion of the potentially significant impacts and their environmental and social costs. CANT identifies nine (9) issues that it alleges are inadequately assessed in the ER as follows:

J.1. Mixed Waste

CANT alleges that the ER fails to discuss the environmental impacts caused by the generation of tons of mixed radioactive waste, for which, it argues, no disposal options exist. CANT incorporates Contentions A and B by reference. As discussed in this Memorandum and Order (see Contentions A and B), CANT is not correct in its classification of the depleted uranium as a "mixed waste." Pursuant to 10 C.F.R. §40.4, depleted uranium is a source material regulated by NRC. The premise of this issue is therefore flawed and the basis cannot be accepted.

J.2. Plant Effluents

CANT alleges that LES's environmental and safety analyses are inadequate in that they fail to account for severe low-probability accidents that may result in discharges that exceed legal limits. Applicant opposes admission, arguing that they have addressed low-probability accidents as required by Commission regulations and CANT has shown no requirement for additional analyses. Staff opposes admission, describing it as an improper attempt to litigate "worst-case" accidents, which even CANT agreed was not required. See Contention C, Basis C.2, *supra*.

It is not clear what "legal limits" CANT is referencing. Part 20 standards for normal operation are not applied to accident situations where appropriate design and siting criteria are used to limit exposure level and dose to individuals or the public. CANT has not demonstrated any consideration of the different standards for normal versus accident situations and has not pointed out any examples where Applicant has not complied with appropriate standards. The basis is denied.

J.3. Decommissioning Costs

CANT asserts that LES has not provided sufficient basis for its estimates of decommissioning costs. Staff does not oppose admission. Applicant would have us deny this basis, pointing out that it rests squarely on Bases 4, 5, and 6 of Contention B. Bases 4 and 5 of Contention B were accepted by this Board as issues in this case. Accordingly, J.3 is accepted.

J.4. Need for Facility

CANT argues that there is no need for the facility since United States enrichment capacity is more than adequate to meet domestic needs through 2010. At the prehearing conference, CANT introduced two newspaper articles. One

pertained to an allegation of Soviet "dumping" of uranium on the U.S. nuclear fuel market, while the second article related to operations at a Department of Energy (DOE) fuel enrichment facility where DOE was shutting down that portion of the plant producing highly enriched uranium. Applicant argues that the economics of the proposed facility are not within the scope of the ER and need not be addressed under NEPA. For a commercial undertaking such as the proposed enrichment facility, the potential market success is not relevant to the NEPA cost-benefit analysis. Applicant further argues that, while it has demonstrated the existence of a market for enrichment services, the economic wisdom of its proposed venture is simply not an environmental issue germane to the NEPA analysis. Staff does not oppose admission. The Board believes that CANT raises a litigable issue. The basic issue involves the following legal question: What, if any, consideration must be given to the need for the facility in fulfilling NEPA responsibilities?

5. Impact of Materials Diversion

CANT merely states that the ER does not discuss the potential environmental and social impacts of improper use of the CEC for production of highly enriched uranium for nuclear weapons and incorporates Contentions L, M, N, and O as additional bases. Applicant and Staff oppose this basis, both stating that the assertion is totally unsupported. The requested license, which would be enforced by NRC, would limit product enrichment to 5%. Additionally, the Commission has recently adopted final rules that provide safeguards that will apply to CEC. No basis has been provided to suggest that LES will not comply with the terms of the requested license and the safeguard requirements of the Commission. The basis is denied.

J.6. Water Contamination

CANT alleges that the ER does not contain a complete or adequate assessment of the potential environmental impacts of the proposed project on ground- and surface water. In support of this basis, CANT states that groundwater is the sole source of drinking water for all of Claiborne Parish; that the groundwater lies as close as 2.5 feet below the surface; that contaminated effluent from CEC will be carried to Lake Claiborne; that Louisiana State law allows the Claiborne Parish Watershed District to manage Lake Claiborne for potential municipal use; that the NRC has noted in a letter to LES that contamination of the CEC site during its operating life is virtually inevitable; and that effluent discharges could result in infiltration of groundwater during periods of extended low precipitation. Staff does not oppose this basis. Applicant argues that CANT has not produced any

facts in support of its proposition that CEC operations would have any adverse effect on surface or groundwater resources. CANT has identified several present and possible future water supply uses that may be impacted by the proposed facility and appear not to have been considered in the ER. The Board accepts this basis restricting it to potential impacts on present and possible future surface and groundwater drinking water supply.

J.7. Wetlands

CANT asserts that LES has not evaluated the impacts of the proposed project on wetlands located on the site or demonstrated that it either has or does not need a permit to build on the wetlands. Applicant opposes admission of this basis, stating that LES recognizes and has demonstrated its commitment and obligation to consult not only with the U.S. Corps of Engineers but also with other federal, state, and local agencies regarding applicable requirements for the construction and operation of the CEC project. LES has requested the U.S. Corps of Engineers to review the site as is noted in ER §9.1, Table 9.4-1. Staff, while not stating its reasons, does not oppose admission of this issue.

The Board does not see an issue here. LES has clearly agreed to work with the Corps of Engineers and the review is currently taking place. The basis is rejected for failing to show that a genuine dispute exists on a material issue of law or fact, as required by section 2.714(b)(2).

J.8. Property Values

CANT disputes Applicant's claim that property values "may be enhanced due to the presence of the LES facility" arguing that because some contamination from CEC is virtually a given and that CEC has the potential to become a storage facility for enormous quantities of hazardous wastes, it is more likely that property values in the area would decline due to the perception of pollution and danger from the plant. Both Applicant and Staff oppose this basis. Each argues that CANT has provided no facts or expert opinion to support its view that property values might fall, and its position constitutes pure speculation. The Board agrees. The basis fails to meet the threshold requirements of section 2.714(b)(2) and is denied.

J.9. Impact on Communities

CANT alleges that the proposed plant will have negative economic and sociological impacts on the minority communities of Forest Grove and Cedar Springs and the ER does not adequately reflect consideration of these impacts.

The closing of Forest Grove Road, which joins the two communities, and the fact that the plant is to be placed "in the dead center of a rural black community consisting of over 150 families" are cited as sources of the impacts. Applicant opposes the issue stating that CANT's allegations are premised on speculation and it provides no support for the proposition that closing off Forest Grove Road and building the plant will have negative impacts on the two communities. Staff does not oppose admission of this issue. The Board believes that CANT has identified an issue with sufficient basis and specificity to meet the requirements of section 2.714(b)(2).

Contention K. No Discussion of No-Action Alternative

The ER violates NEPA because it does not contain an adequate discussion of alternatives to the proposed action.

CANT states that NEPA requires that environmental reports include, *inter alia*, a discussion of "alternatives available for reducing or avoiding environmental effects," and LES fails to satisfy this requirement in the critical respect that it does not discuss the no-action alternative. CANT argues that given the significant environmental costs of this project and the fact that LES has not demonstrated a need for the facility, this alternative should have been analyzed in detail.

Applicant opposes this contention, arguing that there is no explicit regulatory requirement that the ER address the no-action alternative, and Regulatory Guide 4.9, "Preparation of Environmental Reports for Commercial Uranium Enrichment Facilities," Revision 1, October 1975, contains no mention of the need to provide an assessment of the no-action alternative in an Environmental Report.

The Staff does not oppose the admission of this contention in the context of considering Applicant's cost-benefit analysis under NEPA. The Board finds that CANT has adequately demonstrated that a genuine dispute exists with LES on the need to discuss the no-action alternative. The contention is accepted.

Contention L. Online Enrichment Monitoring

In order to provide reasonable assurance that gas centrifuge equipment at the CEC is not unlawfully diverted to the production of highly enriched uranium (HEU), the applicant's fundamental nuclear material control (FNMC) plan should require continuous or frequent online enrichment monitoring for all cascades. To ensure the effectiveness of such monitoring, the plan should stipulate minimum process pipe inner diameters of 110 millimeters or greater at all potential measurement points. The current design of the CEC does not meet these specifications. [Footnotes omitted.]

The basis offered for this contention specifically cites the proposed rule published on December 17, 1990 (55 Fed. Reg. 51,726) (which was substantially unaltered when republished in final form on October 31, 1991) and Draft Regulatory Guide DG-5002, "Material Control and Accounting for Uranium Enrichment Facilities Authorized to Produce Special Nuclear Material of Low Strategic Significance." CANT states that 10 C.F.R. §74.33(c)(5)(i) requires a detection program that provides high assurance of detection of any production of uranium enriched to more than 10% in U-235. And so it does, even in the final version, 56 Fed. Reg. 55,999 (1991).

CANT also notes that DG-5002 says that an extensive program for the centrifuge technology would be appropriate and that such a program can use fixed detectors, portable detectors, or uranium hexafluoride sampling.

CANT then alleges that, in order to have "high assurance" that no production or diversion of highly enriched uranium (HEU) will occur, it is necessary to employ frequent or continuous use of fixed detectors rather than intermittent use of portable detectors, giving several reasons for this position. CANT further alleges that even on-line monitoring is not effective if certain precautions regarding pipe size are not taken, citing an article by its expert, H. Hunt, which suggests errors as high as 200 percent in such monitoring if great care is not taken.

The Applicant says that, since the draft regulatory guide offers several methods, CANT's advocacy of one of them is inadmissible. We think not. As Applicant is fond of reminding us, a regulatory guide is not a regulation. Still less of a regulation is a draft regulatory guide. Where such a document offers several means of compliance with the regulations and an applicant has chosen one of them, we think it entirely appropriate for an intervenor to champion another, offering reasons why this other method will be necessary to achieve the "high assurance" required by the regulation and reasons why the method chosen will not achieve compliance. We note that it is established law that intervenors are not "precluded from demonstrating that [a] prescribed method is inadequate in the particular circumstances of the case." *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-875, 26 NRC 251, 261 (1987), citing *Gulf States Utilities Co.* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760, 772-73 (1977). In this case the argument offered appears supported by expert opinion.

Staff expresses a blanket opposition to the admission of all four related contentions, L, M, N, and O. Staff's position is that the recently published final rule means the contentions have been "superseded" and that they now constitute a challenge to the regulation. We cannot agree. Contention L appears to be a challenge only to the way in which the Applicant plans to satisfy the regulation. Contentions of that nature are clearly admissible. The content is adequately supported as required by section 2.714(b). We will admit Contention L.

Contention M. Monitoring of Sampling Ports, Process Valves, and Flanges

In order to preclude or detect production of HEU by a batch scheme involving misuse of sampling ports, process valves, and/or flanges, the applicant's INMC plan should require effective monitoring by reliable technical means which accurately keep track of employee access to these process connection locations.

As a basis for this contention, CANT again cites the new 10 C.F.R. § 74.33(c)(5)(i), which requires high assurance of detecting unauthorized production of HEU, and DG-5002, which requires that the applicant discuss the use of tamper-indicating seals on process valves and flanges. CANT then offers reasons why the simple use of seals is ineffective and offers communications from personnel at Sandia National Laboratories for the fact that tamper-proofing devices more effective than seals will shortly be available. CANT wishes to make a case for requiring such devices.

LES objects to this contention as a challenge to the regulation and to the draft regulatory guide, as it did to Contention L above. Here the objection is even wider of the mark. CANT clearly urges compliance with the regulation and offers an alternative to the draft guide that is in development and may well not have been considered by the draft guide's framers.

Staff, as noted above, lumps this contention with the other three in this related group, offering no specific objection to it but viewing them all as "superseded" by the adoption of the new regulation. We do not see it that way. The new regulation clearly requires something (means of preventing unauthorized HEU production) that the contention would support. CANT would offer a novel means of complying with the regulation, a means that the draft regulatory guide does not mention, but does not clearly preclude. We will admit Contention M, having met the pleading requirements.

We note that CANT believes that it can litigate these contentions without the use of classified information. Tr. 113. Whether it can be accomplished is yet to be determined.

Contention N. Centrifuge Cell Walls

In order to assure that safeguards can be implemented effectively, opaque walls around small cells of centrifuges should be expressly prohibited during the CBC's entire license term.

At the prehearing conference, CANT agreed to withdraw Contention N upon assurance that certain language concerning the design of the plant would be included in the SAR. Tr. 109.

Contention O. Design for Effective IAEA Inspections

Pursuant to the Hexapartite Agreement, the NRC should require that plant hardware design in every CFC cascade be conducive to effective online gas enrichment monitoring by the International Atomic Energy Agency (IAEA).

In effect, the publication of the new rule has precluded the admission of this contention. In its Supplementary Information concerning public comments that was published with the rule, the Commission stated:

One individual commenter . . . also suggested consulting with IAEA on the plant hardware design prior to construction . . . [A]lthough it is the NRC's responsibility to license the enrichment facility, its requirements for the protection of health and safety of the public and the common defense and security take precedence over IAEA inspection schemes and protocols. Nonetheless, these [material control and accountability] requirements were developed cognizant of the IAEA programs because the U.S. is a member country of the IAEA and complies with IAEA requirements. Consequently, the suggestion of the commenter is refused. 56 Fed. Reg. 55,995.

Thus it appears that the Commission deliberately refused to incorporate a requirement that the International Atomic Energy Agency (IAEA) be consulted on the design of enrichment plants to facilitate later IAEA inspections. It is clearly the Commission's position that compliance with its performance criteria, as they are expressed in the new rule, is all that is needed; that further specific provision in the plant design for projected IAEA inspection is superfluous.

CANT itself asserted at the prehearing conference that "the NRC's final rule that was published on October 31, 1991, now says that the Commission has decided not to require plants to be designed in accordance with IAEA specifications." Tr. 109. That is not quite correct. The Commission evidently believes that it has accommodated anything the IAEA would need with the provisions of the present rule.

The actual hardware needed to comply with those provisions is the subject of Contentions L and M, above. The notion that the designers of the plant need consult with the IAEA to facilitate inspections has been rejected by the Commission. We see nothing else in the contention. It is rejected.

We note here that LES has raised a general objection to the admission of these four contentions, alleging that their content is "a matter before the Commission rather than the Board." Tr. 110. The Commission in its Notice of Hearing and Commission Order of May 21, 1991, provided the opportunity to move the Commission to reconsider any portion of part III of the notice, "III. Commission Order: Criteria for the Issuance of a License," 56 Fed. Reg. 23,310, 23,313 (1991).

The document that engenders this objection, "Citizens Against Nuclear Trash's Objection to Commission Order Dated May 21, 1991, and Comments on Proposed Licensing Standards for Uranium Enrichment Plants" of October 7,

1991, does indeed plead before the Commission for whatever action that body may take. It is also true that these four contentions constitute an attachment to the document. However, a glance at the content of the document itself reveals that the attachment is meant to support CANT's comment on the proposed general design criteria for enrichment facilities. CANT evidently believes that the Commission should include among those criteria a criterion specifying that the design of the facility should be "conducive to implementation of effective, advanced . . . safeguards techniques and procedures."

CANT simply asks the Commission to "give consideration to the issues raised" in the contentions and to the material upon which the contentions are based. The only relief sought before the Commission is the inclusion of certain phraseology in its plant design criteria. Whether or not the Commission ultimately includes such a criterion in its regulations, the presence of the extant 10 C.F.R. § 74.33(c)(5)(i), taken with the material CANT has submitted, offers sufficient basis for the admission of Contentions L and M, and the Supplementary Information cited above offers sufficient grounds for rejecting Contention O. The action that the Commission may take in response to CANT's pending request for relief is simply irrelevant to the admission of these contentions.

Contention P. Liability Insurance

LES proposes to purchase \$120 million in liability insurance. This amount is insufficient to cover LES' potential liability, and is not supported by adequate justification.

For its basis, CANT relies on a Staff request for information which is contained in the letter dated June 25, 1991. Without explanation, the letter states that the amount of liability insurance should be "justified in terms of a reasonable evaluation of the risks required to be covered." CANT incorporates this by reference into the contention. Petitioner adds that the assessed value of property in Claiborne Parish is \$540 million, which is far more than the \$120 million LES proposes to obtain.

The contention fails to meet the requirements of 10 C.F.R. § 2.714(b)(2)(i), (ii), and (iii). No rational explanation is offered to show that the amount of insurance is inadequate. Because the amount of insurance is less than the assessed value of the property in Claiborne Parish does not show that the insurance is inadequate. The issue is whether potential liability for damages that can be caused by the plant will exceed the amount of insurance. This was never discussed in the contention.

The claim that the amount of insurance is not supported by adequate justification is a bare assertion not supported by alleged facts, expert opinion, or explanation, as required by the regulations. The mere request for information

by Staff, without further explanation by Staff and the Petitioner, does not meet the regulatory requirements. The contention is rejected.

Contention Q. Financial Qualifications

LES has not demonstrated that it is financially qualified to build and operate the CEC.

Again, for its basis, CANT relies on a Staff request for information which is contained in the letter of June 25. There are six categories of questions seeking financial information. No explanation is offered by Staff or Petitioner as to why the information is requested or what the consequences are of failing to include the information in the application. The incorporation of the bare questions into the basis of the contention fails to support the contention as is required by the regulations.

Additionally, CANT asserts that LES's financial qualifications are undermined by the fact that two of the four partners in the venture, Duke Power Company and Northern States Power Company, are financially committed only to fund activities during the "venture phase" up to specific ceilings and intend to leave the LES partnership once a construction permit is granted. Petitioner relies on a document titled "Louisiana Energy Services, L.P., a Report to the North Carolina Utilities Commission from Duke Power Company," dated June 20, 1990.

The report confirms that the LES partners are financially committed only to fund LES activities during the venture phase and only up to specific ceilings. It is also the intention of Duke Power Company to sell or redeem the large majority of its shares in LES to outside investors and perhaps to retain a small interest in order to meet NRC licensing requirements. The venture phase was defined as the period during which LES will undertake the securing of an NRC license, marketing the product, and seeking major investors to finance construction of the plant.

Petitioner's contention that LES has not demonstrated that it is financially qualified to build and operate CEC because partners are not committed to fund the building and operation of the facility is admissible. It provides sufficient facts to show a dispute with the Applicant on a material issue of fact. CANT relies on information that has been prepared by one of the principal's affiliates. Should the contention be proven it could be of consequence and entitle Petitioner to relief. The regulatory requirements for the admission of the contention have been satisfied.

Contention R. Management Competence and Integrity

Urenco, the primary impetus behind LES, has proven unable to control the spread of its enrichment technology, which can be used to produce nuclear weapons. There is thus no reasonable assurance that Urenco possesses the requisite corporate character to operate the CEC in a safe and lawful manner.

For its basis, CANT relies on newspaper and trade publication articles reporting that: design blueprints for a Urenco centrifuge were seen in Iraq in 1988; in August 1990, unidentified customs officials confiscated equipment for Urenco-designed centrifuges that was destined for Iraq; and that, through covert activity, Pakistan obtained its enrichment technology from Urenco.

Objections have been raised because the contention is premised on hearsay. That is no bar to the admission of a contention. Contentions based on newspaper articles have been admitted in the past. *Carolina Power and Light Co.* (Shearon Harris Nuclear Power Plant), LBP-86-11, 23 NRC 294, 301 (1986); ALAB-852, 24 NRC 532, 536 (1986).

The issue is whether the contention is supported as required by section 2.714(b)(2). We find that it is not. The articles are too vague to support the contention. They allege that Urenco technology was found in the possession of Iraq and Pakistan. However, they lack sufficient specificity to claim that this was caused by Urenco. Absent any such showing, the contention is a vague, unparticularized charge which is inadmissible. *Catawba*, ALAB-687, *supra*.

Contention S. Quality Assurance

LES has not submitted an adequate quality assurance plan for construction and operation of the CEC.

The basis for the contention is the request for information contained in the June 25, 1991 Staff letter. CANT incorporates the questions raised about quality assurance by reference. No explanation is offered as to how the requests are relevant to the contention.

The request for information has thirty-six numbered requests. They ask LES to describe, consider, clarify, eliminate, or address various matters. No reliance is placed on any regulatory guides for the requested information nor are there explanations overall as to why the information is needed.

What CANT has done in effect is to ask the Board to root through Staff's inquiry and to find something that would support the contention. The proffer is wholly unacceptable. It fails to conform to the process that requires Petitioner to provide an explanation of the basis for the contention with statement of facts upon which it intends to rely that will show a dispute with the Applicant on a material issue of law or fact. The contention is rejected.

Party Status

Section 2.714(b)(1) authorizes the admission of a petitioner as a party, if it submits at least one admissible contention. CANT has satisfied this requirement and should be admitted as a party.

Further Actions

The Board will arrange for a prehearing conference for the purpose of setting a schedule for further actions in the proceeding, narrowing the issues, and considering similarly appropriate measures for moving the case forward.

IV. ORDER

Based upon all of the foregoing, it is hereby ORDERED:

1. Contentions B, H, I, J, K, L, M, and Q are admitted, in the manner described. All others are rejected; and
2. CANT is admitted as a party.

THE ATOMIC SAFETY AND
LICENSING BOARD

Frederick J. Shon
ADMINISTRATIVE JUDGE

Richard F. Cole
ADMINISTRATIVE JUDGE

Morton B. Margulies, Chairman
ADMINISTRATIVE LAW JUDGE

Bethesda, Maryland
December 19, 1991.

Directors'
Decisions
Under
10 CFR 2.206

DIRECTORS' DECISIONS

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of

Docket No. 50-443
(License No. NPF-86)

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE, *et al.*
(Seabrook Station, Unit 1)

December 27, 1991

The Director, Office of Nuclear Reactor Regulation, denies a petition filed by Mr. Michael C. Sinclair of Graystone Emergency Management Associates requesting that the U.S. Nuclear Regulatory Commission withhold a determination on whether the directive in ALAB-941, 32 NRC 337 (1990), was satisfied in the Seabrook Station 1990 FEMA/NRC graded exercise. Mr. Sinclair contended that the directive would not be satisfied until there is documented evidence that the vast majority of the participating schools have adequately demonstrated the ability to effect their implementing procedures for the New Hampshire Emergency Plan. As basis for the request, Petitioner asserts that the Federal Emergency Management Agency's conclusions regarding the exercise, set forth in a March 1, 1991 letter, did not adequately address the Appeal Board's directive in ALAB-941.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDINGS

The institution of proceedings pursuant to 10 C.F.R. § 2.202 is appropriate only if substantial health and safety issues have been raised.

DIRECTOR'S DECISION UNDER 10 C.F.R. § 2.206

INTRODUCTION

By letter of April 12, 1991, Michael C. Sinclair, of Graystone Emergency Management Associates, submitted to the Atomic Safety and Licensing Board (ASLB) a request that the U.S. Nuclear Regulatory Commission (NRC) withhold a determination on whether the directive in ALAB-941, 32 NRC 337 (1990), was satisfied in the Seabrook Station 1990 FEMA/NRC graded exercise. ALAB-941 concerns, *inter alia*, a deficiency in the scope of the June 1988 full-participation exercise at Seabrook regarding the failure to elicit sufficient school participation to have enabled the verification of the schools' integrated capability to respond to the accident scenario. In ALAB-941, the Appeal Board directed that the deficiency be cured in a subsequent exercise. Mr. Sinclair contended that the directive would not be satisfied until there is documented evidence that the vast majority of the participating schools have adequately demonstrated the ability to effect their implementing procedures for the New Hampshire Emergency Plan. Although Mr. Sinclair was not a party to the proceeding that is the subject of ALAB-941, he had previously brought his concern to the Licensing Board in a letter of March 25, 1991, in which he asserted that the Federal Emergency Management Agency's (FEMA's) conclusions regarding the 1990 Seabrook exercise, which were summarized in a March 1, 1991 letter from a FEMA official to the NRC Staff, did not adequately address the Appeal Board's directive.

By Memorandum and Order of May 24, 1991 (unpublished), the Appeal Board stated that it was treating Mr. Sinclair's letter as a request for action pursuant to 10 C.F.R. § 2.206, and, accordingly, referred the letter (hereinafter Petition) to the Executive Director for Operations (EDO) for disposition under that regulation.

By letter of June 27, 1991, I informed Mr. Sinclair (hereinafter Petitioner) that his request had been referred to me for action pursuant to section 2.206. A notice was published in the *Federal Register* on July 5, 1991, indicating that the NRC was considering the Petition (56 Fed. Reg. 30,777). In a letter of October 10, 1991, Mr. Sinclair requested a status report on the NRC's review of his Petition. In a letter of October 24, 1991, the Staff indicated that FEMA's assistance had been requested in responding to the Petition. The Staff made this request to FEMA in accordance with the April 1985 Memorandum of Understanding between FEMA and NRC.

The NRC Staff reviewed FEMA's response of October 10, 1991, and has concluded its evaluation of the Petition. For the reasons discussed below, the

NRC has concluded that the concerns raised in the Petition do not provide a basis for the action requested by the Petition, and denies the Petition.

DISCUSSION

The basis for the Petitioner's request, as set forth in the letters of March 25, 1991, and April 12, 1991, is that FEMA's conclusions regarding the 1990 Seabrook exercise set forth in a March 1, 1991 letter from a FEMA official to NRC Staff did not adequately address the Appeal Board's Directive in ALAB-941. Specifically, the Petitioner believes that the FEMA conclusions should not be interpreted as fully addressing the intent of the Appeal Board's directive to correct the failure to elicit sufficient school participation in the June 1988 exercise, nor as following FEMA's own Exercise Evaluation Methodology. In his April 12, 1991 letter, Mr. Sinclair asserts that there is a contradiction between the pre-exercise agreement, the FEMA exercise review methodology (Objective #19),¹ and what FEMA observed during the exercise. The basis for this assertion appears to be provided in Mr. Sinclair's March 25, 1991 letter in which he claims that (1) all schools were to be called, but in fact all were not contacted (because some were missing from the list and some did not answer the telephone); (2) there should have been more participation by the facilities themselves, e.g. participation by teachers in addition to school administrators; and (3) FEMA stated that it had "reached no conclusions about the adequacy of the performance of the exercise participants," and therefore could not conclude that the pre-exercise conditions were satisfied. In the Petitioner's opinion, the issue to be decided is not whether more special facilities participated in 1990, as FEMA concluded in its March 1, 1991 letter, but whether the participating facilities understood their roles and responsibilities and whether they fully implemented the procedures written for them as part of the emergency plan. According to the Petitioner, the answer to this question is not evident from the FEMA letter of March 1, 1991.

In its letter of March 1, 1991, FEMA summarized the results of the 1990 exercise and stated that

this serves to confirm FEMA's judgment that the sample used in the 1990 Seabrook exercise was adequate to provide a reliable test of the provisions of the New Hampshire Radiological Emergency Response Plan (NHRRERP) relating to notification of public and private schools and day-care centers. FEMA's conclusions about the adequacy of the performance of the exercise participants will be forwarded at a later time, in our exercise evaluation report.

¹Objective 19 addresses implementation of protective actions related to evacuation of schools. Its intent is to demonstrate the ability and resources necessary to implement appropriate protective actions for schoolchildren within the plume EPZ.

On September 9, 1991, FEMA forwarded the exercise evaluation report dated August 23, 1991 (Report) to the NRC. The Report provided additional information on the evaluation of these facilities, consistent with the extent-of-play agreements (agreements made before the exercise among exercise participants as to the extent certain areas will be covered in an exercise). On October 10, 1991, FEMA responded to the NRC's request for assistance in responding to the Petition. The response provided information extracted from the Report at pages 80-88. This information contained FEMA's conclusions regarding the knowledge of the exercise participants of their roles and responsibilities during a radiological emergency, including eyewitness observations by FEMA personnel of the awareness of responsibility and the extent of preparedness of responsible personnel at a variety of schools. Based on this information, FEMA concluded in its October 10, 1991 letter to the NRC that it continued "to believe that the schools evaluated in the 1990 Seabrook exercise adequately demonstrated their knowledge of the provisions of NHRERP relating to the notification of public and private schools and day-care centers."

The NRC Staff concluded, after reviewing this information, that FEMA's evaluation included a determination of the school officials' knowledge of their roles and responsibilities during a radiological emergency and, following FEMA's own Exercise Evaluation Methodology identified only two Areas Requiring Corrective Actions (ARCA) associated with the exercise activities. These ARCA, and the schedule for corrective action provided by the State of New Hampshire, are identified in Attachment B to FEMA's October 10, 1991 letter to NRC.

Thus, the March 1, 1991 letter provided FEMA judgments about the adequacy of the number of schools that participated, and the Report followed up with more detailed and extensive information and conclusions confirming the adequacy of the implementation of protective actions and the performance of the exercise participants. This confirms that the directive of ALAB-941, *supra*, 32 NRC at 355, that "the failure to elicit sufficient school participation in the June 1988 exercise should be corrected in a subsequent exercise," has, in fact, been implemented.

Contrary to Mr. Sinclair's assertion that more participation was needed, full implementation of the plan does not require mandatory 100% participation. It is not "obligatory that the administration of every New Hampshire EPZ school participate in the exercise." (*Id.*). Also, the ALAB-941 decision does not mean "that the 1988 exercise required the direct involvement of classroom teachers, as distinguished from school administrators" (*id.* at 354). Therefore, FEMA's evaluation was properly limited to the capacity of school officials to arrive at that stage of the emergency plan that is short of mandatory 100% participation.

In a March 25, 1991 letter from the Petitioner to Judge Ivan Smith, Chairman of the ASLB, the Petitioner questioned the fact that the lists of schools and

day-care centers to be telephoned by FEMA were provided by New Hampshire Yankee, rather than by the State of New Hampshire. FEMA's response stated that the utility provided the lists in a format suitable for the telephone verification process, solely as a convenience to FEMA and the state. The lists were based entirely on existing state documents and state-provided information.

The Petitioner also criticized the inadvertent omission of a few schools and day-care centers from the lists used by FEMA to make the verification calls. FEMA does not view this as a significant omission, since the omission constitutes a small percentage of calls made in FEMA's verification effort on December 14, 1990. Both ALAB-941, 32 NRC at 342, 355, and FEMA's Guidance Memorandum EV-2 permit less than 100% verification during an exercise.

Another concern of the Petitioner relates to the pre-exercise agreement that all five school administrative offices in New Hampshire were to participate fully by calling all public and private schools in the New Hampshire portion of the emergency planning zone (EPZ). The five New Hampshire School Administrative Units (SAUs) identified in the NHRERP (SAUs 16, 17, 21, 50, and 52) participated in the December 1990 exercise. In accordance with the extent-of-play agreements, the five SAUs participated until the close of the school day. Consequently, the schools did not receive notification of the General Emergency because it occurred at 16:02, after the end of the school day, and not all schools and special facilities could be notified. However, all SAUs have been provided with tone-alert radios which can be used to notify them. The tone-alert radios, according to the extent-of-play agreements, were not activated during the exercise.

As set forth more fully in FEMA's Report, the Seabrook Station 1990 graded exercise was conducted in accordance with the exercise scenario and extent-of-play agreements. As also stated in its Report, in its evaluation, FEMA applied the criteria used in the FEMA evaluation process, including FEMA's own Exercise Evaluation Methodology (EEM). The EEM provides an objective-based method for FEMA to use in evaluating exercises pursuant to 44 C.F.R. Part 350 and 10 C.F.R. Part 50 (NRC). The exercise evaluations presented in FEMA's Report are based on the applicable objective, the extent of play, and evaluation criteria set forth in the Exercise Evaluation Forms.

CONCLUSION

The Petitioner has not raised any concerns that have not already been addressed by FEMA. For the reasons discussed above, I have concluded that the Appeal Board's directive in ALAB-941 concerning the deficiency in the June 1988 Seabrook exercise has been satisfied. Therefore, the Petitioner has

not provided a basis that would warrant the relief requested. The institution of proceedings pursuant to 10 C.F.R. § 2.202 is appropriate only if substantial health and safety issues have been raised (*see Consolidated Edison Co. of New York* (Indian Point, Units 1, 2, and 3), CLI-75-8, 2 NRC 173, 175 (1975); *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), DD-84-7, 19 NRC 899, 924 (1984)). This is the standard that I have applied to the concerns raised by the Petitioner in this Decision to determine if enforcement action is warranted. Consequently, I have denied the Petitioner's request.

A copy of this Decision will be filed with the Secretary for the Commission to review as provided in 10 C.F.R. § 2.206(c).

FOR THE NUCLEAR
REGULATORY COMMISSION

Thomas E. Murley, Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 27th day of December 1991.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of

ALL NUCLEAR POWER REACTORS

December 31, 1991

The Director, Office of Nuclear Reactor Regulation, denies a Petition filed by the Nuclear Control Institute and the Committee to Bridge the Gap requesting the Nuclear Regulatory Commission to institute an individual plant examination (IPE) program that would require licensees to evaluate the margin of nuclear power plants to withstand an attack by explosive-laden surface vehicles and by a larger number of attackers using more sophisticated weapons than specified in the current design-basis threat. As bases for the request, the Petitioners assert that there is a risk from terrorist activities beyond the design-basis threat, that the level of protection varies from plant to plant, that the ongoing IPE program would be a very useful and cost-effective point of departure for a similar evaluation of terrorist threats, and that vulnerabilities that are identified can be eliminated or their effects reduced.

**PHYSICAL PROTECTION: PROTECTION AGAINST THE
DESIGN-BASIS THREAT OF RADIOLOGICAL SABOTAGE**

Section 73.55 of 10 C.F.R. requires licensees to establish and maintain an onsite physical protection system and security organization designed to protect against the design-basis threat of radiological sabotage as defined in 10 C.F.R. § 73.1(a)(1). This is accomplished by a combination of detection, interception, and physical protection.

PHYSICAL PROTECTION: PROTECTION AGAINST THE DESIGN-BASIS THREAT OF RADIOLOGICAL SABOTAGE

The design-basis threat provides a standard for judging the adequacy of physical protection systems, analogous to using design-basis accidents in judging the adequacy of safety systems. This design-basis threat of Part 73 is not an additional standard for judging the adequacy of safety systems pursuant to Part 50 requirements.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDINGS

The NRC will not institute a proceeding pursuant to 10 C.F.R. § 2.206 where the petition fails to raise any substantial health or safety issue.

SABOTAGE: RELATION TO REGULATORY REQUIREMENTS

The Commission's regulations do not require licensees to design safety systems to be resistant to various acts of sabotage, although the diverse and redundant safety systems and structures at nuclear power plants provide some inherent protection against such acts.

DIRECTOR'S DECISION UNDER 10 C.F.R. § 2.206

INTRODUCTION

On September 4, 1991, the Nuclear Control Institute and the Committee to Bridge the Gap (Petitioners), filed a Petition in accordance with 10 C.F.R. § 2.206 with the U.S. Nuclear Regulatory Commission (NRC or Commission). On September 20, 1991, the Petitioners submitted an Annex to the Petition. The Petition was referred to the Director, Office of Nuclear Reactor Regulation, for consideration.

The Petition asked the Commission to institute an individual plant examination (IPE) program requesting licensees to evaluate the margin of nuclear power plants to withstand an attack by explosive-laden surface vehicles and by a larger number of attackers using more sophisticated weapons than specified in the current design-basis threat. The Petition asserts as grounds for this request the following: (1) there is a risk from terrorist activities "beyond the design basis;" (2) the actual level of protection inherent in the structures and safety systems varies from plant to plant and the level of physical protection in security systems is likewise variable; (3) the ongoing IPE program would be a very

useful and cost-effective point of departure for a similar evaluation of terrorist threats, specifically to demonstrate whether the compromise of certain collocated safety equipment from a terrorist attack still leaves adequate capability to shut down the plant and maintain it in a secure state; and (4) vulnerabilities that are identified can be eliminated or their effects reduced.

On October 7, 1991, I acknowledged receipt of the Petition. I informed Petitioners that (1) the Petition would be treated pursuant to 10 C.F.R. § 2.206 of the Commission's regulations and (2) appropriate action would be taken in a reasonable time. For reasons discussed below, the Petition is denied.

BACKGROUND

The Petition asked the Commission to institute an IPE program requesting licensees to evaluate the margin of nuclear power plants to withstand safeguards events beyond the current design-basis threat. An IPE is a systematic examination of plant design and operation that looks for vulnerabilities to severe accidents and cost-effective safety improvements that reduce or eliminate the important vulnerabilities. The ongoing IPE program has been a key part of implementing the Commission's Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants (50 Fed. Reg. 32,138 (Aug. 8, 1985)). This statement describes the policy the Commission has established to resolve safety issues related to reactor accidents more severe than design-basis accidents. The Commission considered the issue of sabotage in developing the severe-accident policy statement and did not include sabotage as a potential initiating event to be addressed in evaluating existing plants. Both the proposed (48 Fed. Reg. 16,014 (Apr. 13, 1983)) and final Policy Statement include the following language:

The issues of both insider and outsider sabotage threats will be carefully analyzed and, to the extent practicable, will be emphasized as special considerations in the design and in the operating procedures developed for *new plants*. [Emphasis added].

The NRC received no public comments regarding this statement.

To help implement the policy statement, Generic Letter 88-20, "Individual Plant Examination for Severe Accident Vulnerabilities — 10 C.F.R. 50.54(f)," dated November 23, 1988, requested that each licensee conduct an IPE for internally initiated accidental events only. On June 28, 1991, the NRC issued Supplement 4 to Generic Letter 88-20, to request that each licensee conduct a systematic IPE for severe accidents initiated by accidental external events (IPEEE). The NRC issued the request for an IPEEE after issuing the request for an IPE to allow the Staff to perform additional work to (1) identify which external hazards need to be evaluated, (2) identify acceptable examination

methods and develop procedural guidance, (3) coordinate with other ongoing external-event programs, and (4) conduct a workshop to explain the IPEEE process and to obtain comments and questions on the draft generic letter supplement and associated guidance document. In the workshop, and as later documented in the IPEEE guidance document (NUREG-1407), the Staff specifically stated that sabotage was not to be addressed as part of the IPEEE.

The general purpose of the IPEEE is similar to that of the internal-event IPE — that is, that each licensee (1) develop an appreciation of severe-accident behavior; (2) understand the most likely severe-accident sequences that could occur at its plant under full-power operating conditions; (3) gain a qualitative understanding of the overall likelihood of core damage and radioactive material release; and (4) if necessary, reduce the overall likelihood of core damage and radioactive material release by modifying hardware and procedures that would help prevent or mitigate severe accidents. Consistent with the Commission's severe-accident policy statement, neither the IPE nor the IPEEE addressed intentional acts of radiological sabotage.

The Commission's regulations do not require licensees to design safety systems to be resistant to various acts of sabotage, although the diverse and redundant safety systems and structures at nuclear power plants provide some inherent protection against such acts. Instead, 10 C.F.R. § 73.55 requires licensees to establish and maintain an onsite physical protection system and security organization designed to protect against the design-basis threat of radiological sabotage as defined in 10 C.F.R. § 73.1(a)(1). This is accomplished by a combination of detection, interception, and physical protection. The design-basis threat is defined in section 73.1(a)(1) as:

- (i) A determined violent external assault, attack by stealth, or deceptive actions, of several persons with the following attributes, assistance and equipment: (A) Well-trained (including military training and skills) and dedicated individuals, (B) inside assistance which may include a knowledgeable individual who attempts to participate in a passive role (e.g., provide information), an active role (e.g., facilitate entrance and exit, disable alarms and communications, participate in violent attack), or both, (C) suitable weapons, up to and including hand-held automatic weapons, equipped with silencers and having long range accuracy, (D) hand-carried equipment, including incapacitating agents and explosives for use as tools of entry or otherwise destroying reactor, facility, transporter, or container integrity or features of the safeguards system, and
- (ii) An internal threat of an insider, including an employee (in any position).

This design-basis threat provides a standard for judging the adequacy of physical protection systems, analogous to using design-basis accidents in judging the adequacy of safety systems. This design-basis threat of Part 73 is not an additional standard for judging the adequacy of safety systems pursuant to Part 50 requirements. Rather, Part 73 establishes additional independent requirements to protect against the design-basis threat.

To assure itself that this Part 73 design-basis threat remains adequate, prudent, and reasonable, the Staff continually reviews the threat from terrorist activities in the world environment (the "threat environment"). Staff analysis and recommendations are provided to the Commission semiannually. Following incidents in the Middle East in the mid-1980s in which terrorists used explosive-laden vehicles as bombs, the Commission considered if the design-basis threat should be changed to include vehicle bombs. The Commission decided that it would not be necessary to change the design-basis threat or to require licensees to provide permanent protective measures against land-vehicle bombs. However, as a matter of prudence, the Commission issued Generic Letter 89-07, "Power Reactor Safeguards Contingency Planning for Surface Vehicle Bombs," on April 28, 1989. In Generic Letter 89-07, the Commission requested licensees to prepare plans and make advance arrangements to implement, within 12 hours, short-range contingency measures in the event that the threat environment affecting reactors in the U.S. changes in a way that prompts the Commission to determine that protection against a land-vehicle bomb threat is appropriate.

The Petitioners previously requested, on January 11, 1991, that the Commission revise its regulations to increase the design-basis threat for nuclear power reactors to include explosive-laden vehicles and a larger number of attackers using more sophisticated weapons. On June 11, 1991, the Commission denied the Petition for Rulemaking based on a determination that there has been no change in the threat environment affecting reactors in the U.S. since the design-basis threat was adopted, that would justify a change in the design-basis threat (56 Fed. Reg. 26,782).

DISCUSSION

The current Petition does not present any information or identify any issues that the Commission has not already considered and addressed in its rulemaking activities concerning sections 73.55 and 73.1(a); policy decisions on severe accidents and the implementing IPE and IPEEE programs; and the denial of the Petitioners' previous request to increase the design-basis threat for radiological sabotage. In describing their perception of the need for an IPE for safeguards events, the Petitioners state that there is a risk from terrorist activities beyond the design basis. The NRC recognizes that any design-basis threat has some related residual risk. One of the purposes of establishing a design-basis threat is to define a policy position on the level of safeguards that is prudent. This issue was previously addressed in the Petition for Rulemaking to revise the design-basis threat. In denying that Petition, the Commission stated that it continues to believe that there is no credible threat targeting power reactors in this country (56 Fed. Reg. 26,782, 26,785 (June 11, 1991)). The current design-basis threat is a

hypothetical threat used to develop regulatory requirements, provide a standard against which changes in the real threat environment can be evaluated, and provide a standard that the Commission considers reasonable for evaluating the implementation of safeguards (*id.* at 26,785 and 26,788).

The Petitioners further state that although the Commission has denied their previous Petition for Rulemaking, action short of a change in the design-basis threat for radiological sabotage remains appropriate. The Staff notes that, by issuing Generic Letter 89-07, the Commission has already taken prudent action short of a change in the design-basis threat regarding surface vehicles laden with explosives.

The Petition states that the actual level of protection inherent in the structures and safety systems varies from plant to plant, that the level of physical protection inherent in security systems is likewise variable, and that the ongoing IPE Program would be a useful and cost-effective point of departure for similar evaluation of terrorist threats. In describing the proposal for a sabotage IPE, the Petition states the following:

Specifically, using the PRA-type models developed in the IPE for plant systems, their interdependencies and relationships, and the way the plant equipment and personnel respond when one or another system or function is compromised, and using the spatial-collocation information developed for the flood-IPE and fire-IPE examinations, an analysis can readily be accomplished to demonstrate whether the compromise of certain collocated equipment from a terrorist attack still leaves adequate capability to shut down the plant and maintain it in a secure state.

The Petition further states the following:

Of course, PRA-type methods can only be used to assess configuration-type vulnerabilities, and not to quantify in an absolute sense, the likelihood of a terrorist attack (the "initiating event" in the PRA-type analysis). Nobody can know what the likelihood of such an attack might be. Hence it is not possible to analyze for "core damage frequency" in analogy to how PRAs calculate this same frequency for inadvertent accidents.

The NRC has already performed or caused to be performed the PRA-type analyses requested in the Petition. In May 1991, the NRC completed its Regulatory Effectiveness Review (RER) Program which included performing a qualitative fault-tree analysis of every operating nuclear power plant. These fault-tree analyses use PRA-type models for plant systems, their interdependencies and relationships, and the way the plant equipment and personnel respond when one or another system or function is compromised. These fault-tree analyses also use spatial-collocation information to determine areas that, if successfully protected against adversaries, would provide adequate capability to shut down the plant and maintain it in a secure state. Since it began the RER program in 1981,

the NRC has used the results of these analyses in validating each licensee's identification of vital equipment and areas.

Since early 1987, the Staff has also used these analyses to identify specific sets of safety equipment which, if lost, would create the most significant challenge to maintaining the plant in a safe condition. The NRC has used the spatial location of these sets of equipment in table-top exercises and licensee contingency response drills to evaluate licensee capability to respond to an external threat with characteristics attributed to the design-basis threat. The Staff will continue to use the fault-tree analyses in new operational safeguards response evaluations of contingency response capabilities at sites where contingency drills were not observed by RER teams. The Staff will review available IPEs and IPEEs, as appropriate, to update the results of fault-tree analyses from the previous RER program.

Some licensees have also used PRA-type analyses in responding to Generic Letter 89-07. At a sufficient distance, a vehicle bomb would present no safety challenge to a nuclear power reactor, regardless of the spatial relationships and interdependencies of the safety systems. Some licensees have chosen to implement their contingency plans at such distances. Other licensees have conducted analyses of spatial relationships and interdependencies of safety equipment to establish closer distances for implementing contingency plans. NUREG/CR-5246, "A Methodology to Assist in Contingency Planning for Protection of Nuclear Power Plants Against Land Vehicle Bombs," April 1989, describes a PRA-type methodology similar to that proposed by the Petitioners, which could be used by licensees to develop contingency plans.

The Annex to the Petition submitted on September 20, 1991, describes examples of plant designs and events that the Petitioners consider represent "possible types of vulnerabilities to beyond-the-design-basis safeguards events." The Petitioners assumed the success of sabotage on certain equipment before interdiction by the security force. Although the NRC Staff does not agree with all of the details and conclusions of the Annex, the examples are similar to those developed by Staff using site-specific fault-tree analyses (where it is assumed that the saboteurs have successfully damaged some equipment before interdiction) as part of the RER and follow-on programs, which evaluate the effectiveness of licensee safeguards programs to protect against various sabotage scenarios.

These effectiveness evaluations conducted by the Staff differ from those proposed in the Petition in one respect. The Staff does not address adversary capabilities beyond those specified in the design-basis threat. Conducting evaluations using more extensive threat characteristics would not provide useful information on the design of safety systems since one of the purposes of the design-basis threat is to provide a standard for evaluating implemented safeguards measures. This design-basis threat is well beyond the actual current

threat environment. The PRA-type fault-tree analyses are not affected by assumptions regarding adversary characteristics. Rather, assumptions regarding adversary characteristics influence the evaluations of the effectiveness of the physical security systems and measures in place to protect against external attacks. Although some licensees have chosen to modify safety systems to increase the difficulty of radiological sabotage, weaknesses identified from the results of the effectiveness evaluations are normally corrected by changes in the physical protection measures.

What the Petition intends in requesting an analysis of each plant's ability to withstand marginal increases in the postulated threat is not clear. The Petition contends that "an overall assessment will be feasible as to how much 'margin' exists beyond the design basis for each plant." The Petition also recognizes that PRA-type methods cannot be used to analyze for "core damage frequency" since one cannot quantify the likelihood of a terrorist attack.

On one hand, the Petition could be interpreted as a request for an analysis of the impact of marginal increases in the postulated threat on the effectiveness of safeguards measures. Having over 15 years of experience in evaluating the overall effectiveness of physical security systems, the Staff believes that such evaluations do not lend themselves to quantitative analysis or qualitative PRA-type analyses. The Staff has successfully used other types of qualitative techniques in evaluating the effectiveness of safeguards measures against general adversary capabilities. However, these techniques are insensitive to marginal changes in the postulated threat.¹

On the other hand, based on the Petition's description of the specific type of analysis proposed and the examples in the Annex, the Petition could be interpreted as directly connecting increases in the design-basis threat with the compromise of collocated safety equipment. The Staff has been conducting the PRA-type analyses proposed in the Petition for about 10 years and has found that such a direct connection cannot be made. PRA-type analyses help identify various combinations of safety equipment which, if at least one combination is protected, would allow a licensee to maintain a plant in a safe condition. PRAs cannot assess the probability that a saboteur would choose to damage one set of equipment over another. There is no practical way to directly connect threats marginally greater than the design-basis threat with sabotage of any amount of safety-related equipment.

¹An example of a postulated change in general adversary characteristics involved the use of a vehicle for entry into a protected area. The NRC evaluated whether this would significantly impact the effectiveness of site-specific physical security measures. In evaluating this postulated change, the Staff identified only one set of circumstances in which a vehicle could have significantly impacted the ability of a power reactor licensee to protect the public health and safety. The Licensee subsequently revised its security measures in such a way that the use of a vehicle became insignificant. However, the effectiveness of safeguards measures as measured by drills and exercises is generally insensitive to marginal increases in the postulated number of attackers.

The Petition states that "vulnerabilities" that are identified can be eliminated. It also notes that the proposed program would produce an assessment of the adequacy of the NRC's own safeguards regulations against terrorist threats. These were essentially the goals of the RER program. Having conducted comprehensive evaluations for 10 years, the Staff concluded that the NRC's safeguards regulations were sound (SECY-91-052, Feb. 26, 1991). RER reviews of safeguards effectiveness at each power reactor site led to more than 500 safeguards improvements. Although the RER program has been completed, the NRC has maintained the unique inspection capabilities developed during the RERs and is continuing to use these capabilities to evaluate the effectiveness of implemented safeguards.

In summary, the Petition is denied for the following reasons:

1. The Petition does not present any information or identify any issues that the Commission has not already considered and addressed in previous policy decisions and rulemaking.
2. The Part 73 design-basis threat for radiological sabotage provides a standard for judging the adequacy of physical protection measures analogous to using design-basis accidents in judging the adequacy of safety systems. The design-basis threat is not an additional standard for judging the adequacy of safety systems.
3. The Commission considered the issue of sabotage in developing the severe-accident policy statement and did not include sabotage as a potential initiating event to be addressed in evaluating existing plants. Consistent with the severe-accident policy statement, neither the IPE nor the IPEEE addressed intentional acts of sabotage.
4. On June 11, 1991, the Commission denied an earlier Petition for Rulemaking from the same Petitioners requesting revision of the NRC's regulations to increase the design-basis threat for nuclear power reactors to include explosive-laden vehicles and a larger number of attackers using more sophisticated weapons.
5. The Staff has performed a qualitative fault-tree analysis of every operating nuclear power plant to ensure that sufficient equipment is protected to provide adequate capability to shut down the plant and maintain it in a secure state. The Staff used these analyses in its RER and continuing programs to evaluate the effectiveness of NRC's safeguards regulations and licensee-implemented safeguards to protect this equipment against the Commission's design-basis threat.
6. To implement Generic Letter 89-07, some licensees have chosen to develop their vehicle bomb contingency plans for distances that would present no safety challenge to a nuclear power reactor. Other licensees have conducted PRA-type analyses such as those requested in the Petition as a basis on which to develop their contingency plans.

7. Techniques for evaluating the effectiveness of physical security measures are generally insensitive to marginal increases in postulated threats, and there is no practical way to directly connect threats marginally greater than the design-basis threat with sabotage of any amount of safety-related equipment.

CONCLUSION

The NRC Staff has reviewed the Petitioners' request that the Commission institute an IPE program requesting licensees to evaluate the margin of nuclear power plants to withstand an attack by explosive-laden surface vehicles and by a larger number of attackers using more sophisticated weapons than specified in the current design-basis threat.

Institution of proceedings in response to a request made pursuant to 10 C.F.R. § 2.206 is appropriate only when substantial health and safety issues have been raised. See *Consolidated Edison Co. of New York* (Indian Point, Units 1, 2, and 3), CLI-75-8, 2 NRC 173, 176 (1975), and *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), DD-84-7, 19 NRC 899, 923 (1984). The NRC has applied this standard to determine if the actions requested in the Petition are warranted. For the reasons discussed above, the NRC has no basis for taking the actions requested in the Petition, since no substantial health and safety issues have been raised by the Petition. Accordingly, the Petitioners' request for action pursuant to 10 C.F.R. § 2.206 is denied.

A copy of this Decision will be filed with the Secretary for the Commission's review in accordance with 10 C.F.R. § 2.206(c).

FOR THE NUCLEAR
REGULATORY COMMISSION

Thomas E. Murley, Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 31st day of December 1991.