

May 21, 2001

EA-01-029

Dr. B. Don Russell, Deputy Director
Texas Engineering Experiment Station/Texas A&M University System
1095 Nuclear Science Road
3575 TAMU
College Station, TX 77843-3575

SUBJECT: NOTICE OF VIOLATION AND PROPOSED IMPOSITION OF CIVIL
PENALTY- \$2,400 AND EXERCISE OF ENFORCEMENT DISCRETION
NRC SPECIAL INSPECTION REPORT NO. 50-128/2000-202, TEXAS
ENGINEERING EXPERIMENT STATION NUCLEAR SCIENCE CENTER
RESEARCH REACTOR

Dear Dr. Russell:

This letter refers to the inspection conducted on December 14 and 15, 2000, at the Texas Engineering Experiment Station/Texas A&M University System Nuclear Science Center (NSC) research reactor facility. This inspection examined the transportation of radioactive material from the NSC reactor as reported by Dr. Reece of your staff on December 8, 2000. The event involved the December 4, 2000, shipment of a package consisting of three capsules that contained a total of 35.0 GBq and 1.6 GBq of Bromine-82 and Copper-64, respectively, from your facility to Tru-Tec personnel located in St. Croix, the Virgin Islands. While in transit, this shipment made stops at a Memphis, Tennessee transportation facility where it was kept from December 5 through December 7, 2000, and the San Juan, Puerto Rico Airport where a change in transportation carrier occurred on December 8, 2000. The shipment was received by Tru-Tec personnel when it arrived in St. Croix, the Virgin Islands on December 8, 2000. The Tru-Tec personnel found that the radioactive material was resting on top of the shipping container in an unshielded configuration. Tru-Tec personnel took immediate corrective action to return the radioactive material to its shielded container and restored the container to an authorized configuration. This issue was initially reported to the NRC by Tru-Tec. Once informed, NSC also reported this issue to the NRC. During the follow-up NRC inspection, two apparent violations of NRC requirements were identified, related to the transport of radioactive material. The NRC documented the results of this inspection including a description of the two apparent violations in Special Inspection Report No. 50-128/2000-202 which was sent to you on February 26, 2001.

On March 29, 2001, the NRC staff held a predecisional enforcement conference with members of your staff in NRC's One White Flint Building in Rockville, Maryland. This conference discussed the apparent violations, their significance, their root causes, and your corrective actions. A copy of the enforcement conference report was sent to you by separate correspondence on April 18, 2001.

Based on the information developed during the inspection and the information that the NSC staff provided during the conference, the NRC has determined that two violations of NRC requirements occurred. The violations are cited in the enclosed Notice of Violation and Proposed Imposition of Civil Penalty (Notice) and the circumstances surrounding them are described in detail in the subject inspection report. The most significant violation involves the failure, prior to the shipment of radioactive material, to ensure that each closure device of the package was properly installed, secured, and free of defects. Specifically, the December 4, 2000, shipment of licensed material used a DOT Type 7A container. The container's restraining "T" bar was not secured as required by applicable certification/packaging instructions. The lack of a securing device on the restraining "T" bar for the shipping container was a primary contributing factor in a chain of events that resulted in a breach of the container and a reconfiguration of the radioactive material to an unshielded condition. The second violation involves the failure to train all hazardous material (hazmat) workers involved in this shipment. The NRC staff considers these violations as one problem with three apparent root causes: (1) a failure of authorized shipping personnel to independently examine the container, (2) the incomplete training of all hazmat workers, and (3) a lack of attention to detail on this shipment.

In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," (Enforcement Policy), NUREG-1600, the NRC staff considered the significance of the violations based on actual and potential safety consequences.

In assessing actual consequences, the NRC staff considered that the radioactive material involved in this shipment was not lost or damaged while on route to its destination. Nevertheless, based on the manner in which the container arrived in St. Croix, the Virgin Islands, the NRC staff concluded some human interaction was involved in the reconfiguration of the shipment which would have resulted in exposure to members of the general public. No actual exposure higher than expected was identified when personal radiation monitoring devices worn by transportation facility personnel were examined. However, examination of dosimetry records provided inconclusive information as only selected transportation workers who may have had contact with the shipment wear personal radiation monitoring devices, which is not a requirement of either the NRC or the Department of Transportation (DOT). In addition, the individual or individuals that were involved in the breach of the container were not identified. As a result, the actual exposure received by members of the general public could not be estimated.

In assessing potential consequences, the NRC staff considered the realistic likelihood of affecting safety, i.e., the existence of credible scenarios with the potential to exceed regulatory requirements. As a result of the event investigation, the restraining "T" bar was located at the Memphis, Tennessee transportation facility. Based on this discovery, the NRC staff concluded that the breach of the transportation container apparently occurred while the package was stored at the Memphis, Tennessee transportation facility. The shipment would have then continued on to its intended destination in a reconfigured, unshielded state with the radioactive material located on top of the container. The NRC staff determined that unmonitored individuals could have been exposed to the unshielded material because once the securing device was absent, no controls precluded this condition, and therefore, transportation workers (members of the general public) could have received a radiological exposure of greater than 0.1 rem by being in close proximity to the package for a few minutes. The NRC staff concluded

that the failure of NSC to install a securing device on the restraining "T" bar for the shipping container resulted in a clear potential for members of the general public to receive more than 0.1 rem to the whole body which is the 10 CFR Part 20 annual dose limit. The purpose of transportation requirements is to prevent unshielded radioactive material from getting into the public domain. When this happens, there is a potential for a very significant exposure and it is considered a very significant regulatory concern. Therefore, in accordance with Supplement V of the Enforcement Policy, these violations are categorized collectively as a Severity Level II problem.

In accordance with the Enforcement Policy a base civil penalty in the amount of \$4,800 is considered for this Severity Level II problem. Since this problem is classified as a Severity Level II, the NRC considered, consistent with the Enforcement Policy, whether credit was warranted for both identification and corrective action. Credit for identification is not warranted since the violation was revealed when the shipment was received by Tru-Tec personnel and reported to the NRC. Credit for corrective action is warranted because your actions, at the time of the enforcement conference, were both prompt and comprehensive. These actions, which were noted in the inspection report and/or at the enforcement conference, included suspension of radioactive shipments, an evaluation of the incident, and increased management supervision of shipping activities once they resumed. You also provided additional independent review on radioactive shipments, specific hazmat training requirements for all individuals involved in shipping, and enhanced understanding of the importance of personal responsibility and attention to detail.

Based on the above evaluation of identification and corrective action, in accordance with the Enforcement Policy, a civil penalty equal to the base amount would normally be issued. The NRC staff considers the failure on the part of NSC to adequately secure the transportation container to be a primary cause as the regulatory framework for the transportation of radioactive material relies heavily on the assumption that radioactive material remains secure within its shielded container while in transit. However, while NSC is responsible for its performance, the NRC staff recognizes that the sequence of events was influenced, in part, by the actions of transportation workers who failed to adequately respond when the integrity of the transportation container was breached. DOT has conducted its own investigation and is considering action regarding the involved transportation companies. Based on the role that the transportation personnel played in this event, I have determined that it is appropriate to apply discretion in accordance with Section VII.B.6, "Violations Involving Special Circumstances," of the Enforcement Policy to mitigate the proposed civil penalty to a value of 50 percent of the penalty determined after considering identification and corrective action to more accurately characterize the significance of the actions of NSC personnel. Therefore, to emphasize the importance of appropriate controls of shipments from your facility, I have been authorized, after consultation with the Director, Office of Enforcement to propose a civil penalty in the amount of \$2,400 in this case.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

Dr. B. D. Russell

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In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure(s), and your response will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Jon R. Johnson, Deputy Director
Office of Nuclear Reactor Regulation

Docket No. 50-128
License No. R-83

Enclosure: Notice of Violation and Proposed
Imposition of Civil Penalty
NUREG/BR-0254 Payment Methods (Licensee only)

cc: Please see next page

cc:

Dr. Warren D. Reece, Director
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Texas Engineering Experiment Station
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College Station, TX 77843

Roger Mulder
State Energy Conservation Office
Comptroller of Public Accounts
P.O. Box 13528
Austin, Texas 78711-3528

Texas State Department of Health
Radiation Control Program Director
Bureau of Radiation Control
Dept. of Health
1100 West 49th Street
Austin, TX 78756-3189

Test, Research and Training
Reactor Newsletter
202 Nuclear Sciences Center
University of Florida
Gainesville, FL 32611

U.S. Customs Service
Safety Branch
Mr. Rick Whitman
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U.S. Department of Transportation
Mr. Raymond Lamagdelaine, Special
Investigations Chief
Office of Hazardous Materials Enforcement
DHR-40
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Washington, DC 20590

Richard A. Ratliff, P.E., L.M.P. Chief
Bureau of Radiation Control
Texas Department of Health
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Austin, TX 78756-3189

Susan Jablonski
Health Physicist and Technical Advisor
Office of Permitting, Remediation & Registration
Texas Natural Resource Conservation Commission
P.O. Box 13087, MS 122
Austin, TX 78711-3087

Dr. B. D. Russell

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Sincerely,

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Jon R. Johnson, Deputy Director
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ADAMS ACCESSION NUMBER: NOV - ML011130274
ADAMS ACCESSION NUMBER: ACTION - ML011270093

TEMPLATE #: NRR-106

OFFICE	REXB:PM	REXB:LA	REXB:BC	OGC	OE	DRIP:D	NRR:DD
NAME	MMendonca:rd	EHylton	LMarsh	DDamble	FCongel	DMatthews	JJohnson

DATE	05/04/2001	05/07/2001	05/08/2001	05/08/2001	05/15/2001	05/14/2001	05/15/2001
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NOTICE OF VIOLATION
AND
PROPOSED IMPOSITION OF CIVIL PENALTY

Texas Engineering Experiment Station/Texas A&M University System
Nuclear Science Center
College Station, Texas

Docket No. 50-128
License No. R-83
EA-01-029

During an NRC inspection conducted on December 14-15, 2000, violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions" NUREG-1600, the NRC proposes to impose a civil penalty pursuant to Section 234 of the Atomic Energy Act of 1954, as amended (Act), 42 U.S.C. 2282, and 10 CFR 2.205. The particular violations and associated civil penalty are set forth below:

- A. 10 CFR 71.5(a) requires that a licensee who transports licensed material outside the site of usage, as specified in the NRC license, or where transport is on public highways, 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 through 189.

49 CFR 173.475 requires, in part, that before each shipment of any Class 7 (radioactive) materials package, the offeror must insure by examination or appropriate tests, that: the packaging is proper for the contents to be shipped; each closure device of the packaging, including required gasket, is properly installed, secured, and free of defects; and each special instruction for filling, closing, and preparation of the packaging for shipment has been followed.

Contrary to the above, on December 4, 2000, the licensee delivered to a carrier for transport a Class 7 (radioactive) material package for 35.0 GBq and 1.6 GBq of Bromine-82 and Copper-64, respectively, and the licensee failed to ensure that the closure device was properly secured. In addition, the package was not closed and secured as required by the manufacture's certification, in that a securing device was not installed on the container's restraining "T" bar as described in the packaging instructions.

- B. 10 CFR 71.5(a) requires that a licensee who transports licensed material outside the site of usage, as specified in the NRC license, or where transport is on public highways, 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 through 189.

49 CFR 172.702 requires that each hazmat employer shall ensure that each hazmat employee is trained and tested, and that no hazmat employee performs any function subject to the requirements of 49 CFR Parts 171-177 unless trained in the requirements of Subpart H of 49 CFR Part 172. The terms hazmat employer and hazmat employee are defined in 49 CFR 171.8.

Contrary to the above the licensee did not provide training for its reactor operations hazmat employees involved in the December 4, 2000, shipment in the requirements of Subpart H to 49 CFR Part 172, and the licensee is a hazmat employer in 49 CFR 171.8.

Together, these violations constitute a Severity Level II problem (Supplement V).
Civil Penalty - \$2,400

Pursuant to the provisions of 10 CFR 2.201, Texas A&M University is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555 within 30 days of the date of the letter transmitting this Notice of Violation and Proposed Imposition of Civil Penalty (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) admission or denial of the alleged violation, (2) the reasons for the violation, if admitted, and if denied, the reasons why, (3) the corrective steps that have been taken and the results achieved, (4) the corrective steps that will be taken to avoid further violations, and (5) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

Within the same time as provided for the response required above under 10 CFR 2.201, the Licensee may pay the civil penalty proposed above by submitting to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, a statement indicating when and by what method payment was made, or may protest imposition of the civil penalty in whole or in part, by a written answer addressed to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission. Should the Licensee fail to answer within the time specified, an order imposing the civil penalty will be issued. Should the Licensee elect to file an answer in accordance with 10 CFR 2.205 protesting the civil penalty, in whole or in part, such answer should be clearly marked as an "Answer to a Notice of Violation" and may: (1) deny the violation(s) listed in this Notice, in whole or in part, (2) demonstrate extenuating circumstances, (3) show error in this Notice, or (4) show other reasons why the penalty should not be imposed. In addition to protesting the civil penalty in whole or in part, such answer may request remission or mitigation of the penalty.

In requesting mitigation of the proposed penalty, the factors addressed in Section VI.C.2 of the Enforcement Policy should be addressed. Any written answer in accordance with 10 CFR 2.205 should be set forth separately from the statement or explanation in reply pursuant to 10 CFR 2.201, but may incorporate parts of the 10 CFR 2.201 reply by specific reference (e.g., citing page and paragraph numbers) to avoid repetition. The attention of the Licensee is directed to the other provisions of 10 CFR 2.205, regarding the procedure for imposing a civil penalty.

Upon failure to pay any civil penalty due which subsequently has been determined in accordance with the applicable provisions of 10 CFR 2.205, this matter may be referred to the Attorney General, and the penalty, unless compromised, remitted, or mitigated, may be collected by civil action pursuant to Section 234c of the Act, 42 U.S.C. 2282c.

The response noted above (Reply to Notice of Violation, statement as to payment of civil penalty, and Answer to a Notice of Violation) should be addressed to: Frank J. Congel, Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852-2738, with a copy to David B. Matthews, Division of Regulatory Improvement Programs, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852-2738.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS), to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. ADAMS is accessible from the NRC Web site at (the Public Electronic Reading Room) <http://www.nrc.gov/NRC/ADAMS/index.html>. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.790(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days.

Dated this 21st day of May 2001