



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV

611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

CAL 96-005

OCT 24 1996

Dr. John Meason
Commander
U.S. Army White Sands Missile Range
ATTN: STEWS-DT (Maeson)
White Sands Missile Range
White Sands, New Mexico 88002-5048

SUBJECT: CONFIRMATORY ACTION LETTER

Dear Dr. Meason:

This refers to our inspection of the use of cobalt-60 sources manufactured by Neutron Products, Inc., in the irradiator at the Gamma Range Facility, White Sands Missile Range (WSMR). The inspection was initiated in response to notification provided by WSMR staff that a cobalt-60 source was identified as leaking during a leak test performed on April 24, 1996. WSMR had previously provided written notification of another leaking source of the same model, strength, and approximate age by letter dated June 23, 1994. In addition, cobalt-60 sources of the same model and strength were previously found to be leaking in 1982 and 1983.

The inspection included examination of the Gamma Range Facility, the irradiator and source transfer system, and source carriers used in the irradiator, all of which are unique. The inspectors also reviewed information relating to the irradiator design and previous analyses of the use of sealed sources in the system completed by WSMR and its contractor.

Our review of this matter has identified significant concerns about the continued use of sealed sources (both cesium-137 and cobalt-60), with source carriers supplied by WSMR, in the Gamma Range Facility. Specifically, the recent visual examination (performed on July 30, 1996, at Neutron Product, Inc.'s facility) of one of the leaking sources identified significant damage to the source capsule, allowing contamination to spread to the external surfaces of the source carrier and beyond to the internal surfaces of the irradiator. In addition, based on our review of historical operation of the irradiator and WSMR's response to earlier incidents involving leakage of cobalt-60 sources, we are concerned that changes have been made to the source and carrier design without sufficient analysis of their impact on the integrity of the source capsule over a period of use. Further, we have also noted concerns relating to operating practices which may require further review in order to determine whether they contributed to the source failures.

These concerns were discussed with members of your staff responsible for operation of the Gamma Range Facility during a telephonic exit briefing on October 3, 1996, and will be described in detail in an inspection report which will be forwarded to you in the near future. However, because WSMR has had several incidents involving contamination of the irradiator due to failure of cobalt-60 sources, I find it necessary to request that WSMR take prompt action to address these concerns as described below.

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Pursuant to a telephone conversation between you and Ms. Linda Howell of this office on October 21, 1996, it is our understanding that you will take the following actions:

1. Complete and submit for NRC review an engineering assessment of the failure of two cobalt-60 sources (Neutron Products, Inc., Serial Nos. 175-90-4 and 175-90-1, nominal activity of 4100 curies each) previously used in the irradiator at the Gamma Range Facility. The assessment will focus on identifying the root cause of the failures, for both the source carriers and the manufacturer's source capsules, and any contributing factors, including operating practices at the facility. The assessment will include examination of the remaining two cobalt-60 sources of the same model and nominal activity used in the irradiator between 1990 and 1996 to ensure a full evaluation of potential damage to sources used in the irradiator during this period.
2. Based on the assessment described in Item 1, WSMR will propose and submit for review a design change for the sources and carriers used in the irradiator or, alternatively, provide justification for continued use of the sources and carriers without modification.
3. Based on the findings and conclusions developed under Items 1 and 2, WSMR will complete and submit for review a validation study to support use of a new source and/or carrier design or complete a new validation study to support continued use of the existing sources and carriers. The validation study will include evaluation and appropriate testing of the potential effects of the number of exposure cycles likely to be experienced over the anticipated period of use of all sources in the irradiator. Should WSMR decide to permanently discontinue use of the cesium-137 sources in this system, your response to this letter should describe your plans for disposing of the cesium-137 sources, and the validation study may be limited to the cobalt-60 sources proposed for use in the system.
4. Submit a plan and proposed schedule for accomplishing Items 1 through 3 which will be incorporated in License 30-02405-01 by reference, within 30 days of the date of this letter. This submittal shall be in the form of a license amendment request.
5. Submit, within 30 days of the date of this letter, a description of the interim actions that WSMR plans to implement to ensure that operational controls are sufficient to minimize the risk of further source failures and adequate to provide for prompt identification of source leakage until Items 1 through 3 are completed.
6. Review your procedures relating to operation of the irradiator and air handling systems, based on your findings under Item 1 above and the results of the NRC's inspection, and propose modifications as necessary to address WSMR's and the NRC's inspection findings. Any proposed changes to existing procedures or any new procedures developed in accordance with this letter will be submitted to the

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NRC for review, with a request for amendment of the license to incorporate the procedures by reference. Alternatively, if you determine, based on your evaluation and review, that changes or additions to existing procedures are not warranted, then you will provide a justification to the NRC stating why you believe procedure modifications are not necessary.

Pursuant to Section 182 of the Atomic Energy Act, 42 U.S.C. 2232, you are required to:

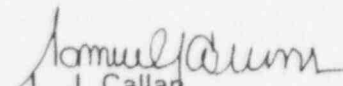
1. Notify me immediately if your understanding differs from that set forth above;
2. Notify me if for any reason you cannot complete the actions within the proposed schedule and advise me in writing of your modified schedule in advance of the change; and
3. Notify me in writing when you have completed the actions addressed in this Confirmatory Action Letter.

Issuance of this Confirmatory Action Letter does not preclude issuance of an order formalizing the above commitments or requiring other actions on the part of the licensee; nor does it preclude the NRC from taking enforcement action for violations of NRC requirements that may have prompted the issuance of this letter. In addition, failure to take the actions addressed in this Confirmatory Action Letter may result in enforcement action.

The responses directed by this letter are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, Pub. L. No. 96-511.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, and your response will be placed in the NRC Public Document Room (PDR). To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be placed in the PDR without redaction. However, if you find it necessary to include such information, you should clearly indicate the specific information that you desire not to be placed in the PDR, and provide the legal basis to support your request for withholding the information from the public.

Sincerely,


L. J. Callan
Regional Administrator

Docket: 030-09345
License: 30-02405-01

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Department of the Army
White Sands Missile Range

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cc:
NRC Public Document Room
New Mexico Radiation Control Program Director

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Department of the Army
White Sands Missile Range

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bcc:

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J. L. Lieberman, D/OE (2) (7 H5)

L. J. Chandler, Asst. GC/OGC (15 B18)

H. L. Thompson, DEDS (17 G21)

C. Paperiello, D/NMSS (T8F5)

L. W. Camper, IMAB/NMSS (T8F5)

RIV Coordinator, OEC ~ (17 G21)

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G. C. Pangburn, ADD/DNMS

C. L. Cain, TA/DNMS

L. L. Howell, Branch Chief

D. B. Spitzberg, Branch Chief

F. A. Wenslawski, Branch Chief

G. F. Sanborn, EO

B. Henderson, PAO

J. Carson, ORA

RIV Files

NMI&FC/DB File

RIV Materials File - 5th Floor

NMI&FC/DB and NMLB Inspectors (10)

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10/11/96	10/15/96	10/22/96	10/15/96	10/13/96
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WLBrown	TPGwynn	LJCallan		
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Department of the Army
White Sands Missile Range

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WLBrown	TPGwynn	LJCallan		
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