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DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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September 21, 1994

Mr. Mark Whitaker, EH-6
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

Dear Mr. Whitaker:

Enclosed for your information and distribution are fifteen (15) Defense Nuclear Facilities Safety Board (DNFSB) staff reports. The reports have been placed in the DNFSB Public Reading Room.

Sincerely,

A handwritten signature in black ink, appearing to read "George W. Cunningham".
George W. Cunningham
Technical Director

Enclosures (15)

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 22, 1994

MEMORANDUM FOR: G. W. Cunningham, Technical Director**COPIES:** Board Members**FROM:** J. T. Arcano, Jr.**SUBJECT:** Order Compliance Review of Rocky Flats Plant Building 707,
January 10-14, 1994

1. Purpose: This report describes the results of a Defense Nuclear Facilities Safety Board (DNFSB) staff Order Compliance Review of Building 707 at the Rocky Flats Plant (RFP). The review was conducted from January 10-14, 1994, by J. Arcano, R. Arcaro, F. Bamdad, M. Helfrich, R. Kasdorf, and C. Keilers.

2. Summary:

- a. There does not appear to have been any significant change in the overall status of Order compliance in Building 707 since the Board's deliberation in February 1993.
- b. EG&G Rocky Flats is attempting to establish Order compliance as an ongoing process inherent to day-to-day operations. The incorporation of Order requirements and industry standards into EG&G RF procedures to provide administrative compliance is a well-established program that appears to be satisfactory. While the EG&G RF independent assessment group has established an acceptable program, the Building 707 line management currently does not have an auditable, systematic program that establishes a pattern of *adherence* to the Orders.
- c. DOE-Rocky Flats Office (RFO) appears to lack an effective systematic *adherence* compliance assessment program. The staff will conduct a more detailed review of the RFO program in the near future.
- d. A staff floor-level assessment of requirements from seventeen Orders indicated that Rocky Flats Plant is, in general, in compliance with these Orders. One minor noncompliance was noted.

3. Background:

- a. In February 1993, the Defense Nuclear Facilities Safety Board deliberated on the proposed resumption of thermal stabilization operations in Building 707 and informed the Department of Energy that no Board recommendation, prior to resuming operations, was necessary to protect public health and safety.

- b. DOE has not authorized resumption of operations in Building 707, pending the completion of an Environmental Assessment. However, DOE anticipates authorization to resume Building 707 thermal stabilization operations in the near future.
4. **Discussion:** This review updated the status of Order compliance in Building 707 since the February 1993 Board deliberation. A brief review of previous Order compliance efforts, including changes in *administrative* Order compliance that occurred over the past year, was completed. The review focused primarily on the *adherence* compliance of seventeen Orders in the areas of Nuclear Safety and Fire Protection; Management Systems and Standards; Personnel, Training, Maintenance, and Operations; Emergency Preparedness; Environmental Protection and Radioactive Waste; and Environmental, Safety, Health and Radiation Protection. (These seventeen Orders are detailed in the attachment.)
- a. **EG&G Rocky Flats Order Compliance Program:**

RFP has not been required to follow the Defense Programs (DP) *Order Compliance Self-Assessment Instruction* (DP-AP-202) because the RFP program was considered by DOE Defense Programs (DP-6.1) (V. Stello) to be just as rigorous. DP 6.1 did not require RFP to comply with DP-AP-202 until six months after the "resumption" of Building 707. The fact that "resumption" has not occurred within the original anticipated time frame, and that RFP is now under the auspices of EM, has not caused EG&G RF or RFO to reconsider this direction. The RFO Director of Performance Assessment stated that both EG&G RF and RFO will be in compliance with the follow-on program to DP-AP-202 within six months of it being formally adopted by DOE.

EG&G RF is attempting to establish Order compliance as an ongoing process inherent to day-to-day operations. They have taken the Standards/Requirements Identification Document (S/RID) approach of reaching beyond Orders to include other applicable standards, with a goal of site-wide standards-based operations. As such, their Order compliance program consists of two phases:

 - 1. **Phase 1:** Programmatic *administrative* compliance is stated by EG&G RF to be the crux of the Order compliance process to ensure the flow down of Order requirements into RFP procedures. The incorporation of Order requirements and industry standards into EG&G RF procedures to provide *administrative* compliance is a well-established program that has been found to be satisfactory by the staff. This program goes beyond the Orders of interest to the Board (i.e., includes about 200 DOE Orders and Federal Regulations).

2. **Phase 2:** Floor-level *adherence* compliance requires personnel to follow RFP procedures and to assess their compliance with these procedures. In addition to training personnel on the need to follow procedures, EG&G has several programs in place to better ensure that their requirements are being followed. For example:
 - (a) The Operation Review Committee and the Senior Review Board review details of changes in hardware and procedures used on the floor to assure safety and compliance with requirements.
 - (b) The Nuclear Criticality Safety Committee performs audits of the handling, processing, and storage of fissile materials to assure criticality safety.
 - (c) The Integrated Work Control Program assures that there is appropriate review and approval of procedures being used by line management.
 - (d) A Mentor Program puts senior, knowledgeable personnel into the facilities to train their work force on the need to make adherence to work procedures and standards a part of the normal work routine.
- b. **EG&G RF Adherence Compliance Assessments:** EG&G RF performs several types of reviews, which vary significantly in scope and caliber, to assess and assure their compliance with procedures. These can be categorized as:
 1. **Independent Assessments:** The Site Assessment Division is tasked with performing independent assessments to ensure that personnel are complying with RFP procedures. Site Assessment, the highest level organization for technical oversight at EG&G RF, performs independent "self-assessments" of all functional areas, with coverage geared towards reviewing all aspects of major programs at least every 5 years.

In the past, the Site Assessment Division did not use explicit criteria to guide assessments, resulting in reports that did not document which Order requirements or derivative procedures were assessed for compliance. However, more recent assessments appear to be providing these criteria.

This program appears to provide an adequate systematic, independent assessment of their compliance with their requirements.
 2. **Line Management Assessments:** "Self-evaluations" are assessments in which line management looks inward to evaluate their own program compliance and effectiveness. All performance areas are to be evaluated every three years.

EG&G RF has defined a formal program for these assessments in 1-11000-ADM-16.10, *Self-Evaluation Program*. However, implementation of the Self-Evaluation Program is not consistent throughout EG&G RF. For example, Waste Management Division appears to perform effective line "self-evaluations" of its efforts. (It should be noted that Waste Management Division evaluations are driven by external organizations' environmental regulations, not by order compliance.) In contrast, the staff noted that the Self-Evaluation Program had not been effectively implemented by Building 707 operations management. While Building 707 operations management had issued what appeared to be an adequate procedure, self-evaluations per this procedure were not being performed. Building management cited budget constraints and the fact that other groups performed assessments as reasons why these self-evaluations were not being performed.

Self-evaluations are performed by the site-wide training organization, Performance Based Training (PBT). The vast majority of these assessments provide feedback on the quality of training provided by that group. Although valuable, the assessments do not review the status of compliance with DOE Orders on training other than to verify that the training is actually performed. A field-level verification of adherence compliance is not pursued.

Similarly, self-evaluations performed by the line training organization, Plutonium Operations and Residue Training (PORT), do not systematically assess adherence compliance with DOE Orders. A monthly assessment by each responsible individual within PORT is required by the PORT director. Beyond this requirement, there is little formality to the assessment program. The assessments are primarily informal observations of briefs, classroom training, drills and other miscellaneous events. Checklists or objective criteria are not used to determine the status of adherence compliance with the DOE training Orders.

EG&G RF, including Building 707 operations management, performs many assessments and surveillances. However, these have not been performed to satisfy Order compliance concerns. As a result, the assessments and surveillance have not been effectively tied to Order requirements. While these assessments and surveillances could potentially provide adequate Order compliance reviews if properly coordinated and developed, to date, they are not systematic and do not effectively demonstrate *adherence* to documented procedures, as called for by DP-AP-202. EG&G RF apparently has not provided an auditable, systematic program that establishes a pattern of adherence to the Orders.

Prior to completion of this Order compliance review, the Assistant General Manager for Plutonium Operations presented the staff with his plan of action for implementing a line management self-evaluation program. If implemented as planned, this program has the potential to provide an adequate self-evaluation program for operations management. The staff will follow-up on implementation of this procedure.

- c. **DNFSB Compliance Review Results:** The staff assessed RFP *adherence* compliance by evaluating a "smart sampling" of requirements of the seventeen Orders noted in the Enclosure. This evaluation indicated that RFP, in general, is in compliance with the seventeen Orders reviewed. During this limited review, only one minor adherence noncompliance with DOE Order 5000.3B, *Occurrence Reporting and Processing of Operations Information*, was identified by the staff (i.e., not all occurrence reports were issued within the specified time frame).

RFP has not yet fully implemented several of the DOE Orders reviewed (DOE Orders 4330.4A, *Maintenance Management Program*; 5480.22, *Technical Safety Requirements*; 5480.23, Safety Analysis Reports; 5700.6C, *Quality Assurance*; and DOE Notice 5480.6, *Radiological Controls Manual*). EG&G RF has, however, submitted Implementation Plans for these new Orders. EG&G RF was, in general, implementing the Orders as laid out in the implementation plans. However, changes to implementation dates have been made without Headquarters approval.

EG&G RF has made several changes to the implementation plan for DOE Order 5700.6C, *Quality Assurance*, but has failed to provide annual submission of these changes to the Lead PSO for review, as required by the Order. The current schedule for the implementation of the Order is undetermined, attributed by EG&G RF to unknowns in the upcoming finalization of quality assurance requirements in 10CFR830.120, *Quality Assurance Requirements*. However, this claim has no validity since 10CFR830.120 will most likely simply restate DOE Order 5700.6C requirements.

- d. **Changes in Order Compliance Status:** There does not appear to have been any significant change in the overall status of Order compliance in Building 707 since the Board deliberation in February 1993. The following changes have occurred:
 - 1. Eight new Orders have been issued and are in various stages of being addressed by EG&G. Nine Orders have been revised. The Administrative program to address new Orders and revisions to existing Orders should result in proper flow down of requirements into EG&G RF procedures.

Although, EG&G RF had already implemented changes to their procedure to comply with a revision to DOE Order 5000.3B, *Occurrence Reporting and Processing of Operations Information*, they had not yet formally assessed administrative compliance with this revision. This administrative compliance assessment is in progress.

2. All 35 Short Term Compliance Statements (STCS) have been verified complete by EG&G RF. Three new STCS have been submitted to DOE.
 3. Two new Compliance Schedule Approval (CSA) requests have been identified. There are now 21 CSAs applicable to Building 707.
- e. **Corrective Action Program:** The staff believes that a key ingredient of a satisfactory Order compliance program is an effective corrective action program. In 1992, the Building 707 DOE Operational Readiness Review Team found the EG&G RF corrective action program to be effective, however, it also noted that numerous site-wide programs were not integrated, prioritized, centrally tracked, or trended to provide effective information on corrective actions to plant management. As a result, the EG&G RF corrective action program has been revised and is due to be fully implemented in July 1994. This program appears to be satisfactory, however, it must integrate an existing system that already has over 30,000 action items. The large number of action items will most likely dilute the effectiveness of the system.
- f. **DOE-RFO Order Compliance:** RFO has done a one-time programmatic Order compliance review for Building 559. This review was considered valid for Building 707 resumption. RFO is slowly making progress towards evaluating Orders that have since been revised. RFO appears to lack an effective systematic adherence compliance assessment program. The staff will conduct a comprehensive review of the RFO Order compliance program in February 1994.
- g. **DOE-EH Oversight of RFP Order Compliance:** The EH-10 Site Representative (formerly NS) does not conduct any reviews specifically for Order compliance. The Site Representative told the staff that his organization is in a reactive mode, reviewing problems and concerns as they are identified. When a problem is identified, the EH-10 Site Representative determines what requirements exist in the problem area and assesses whether RFP is in compliance.

The EH-30 Site Representative (the original EH Site Representative) is providing oversight for facilities other than just RFP, for example, Albuquerque Area Operations Office. While "home base" is RFP, the Site Representative and his assistants spend less than half their time at RFP. They do conduct Order compliance

type reviews but these are primarily focused on OSHA Orders and requirements. They do not conduct systematic reviews of all the DOE Orders of interest to the Board.

EH Headquarters has not conducted systematic reviews at RFP for Order compliance for all the Orders of interest to the Board. They have conducted Order compliance type reviews of some DOE Orders, such as medical appraisals and environmental restoration requirements associated with the solar pond clean-up. They have also conducted "tiger team" progress reviews which are primarily OSHA reviews.

5. Future Staff Actions: The staff intends to take the following future actions:

- a. In February, 1994, perform an in-depth review of the RFO Order compliance program.
- b. Assess compliance with DOE Order 5000.3B, *Occurrence Reporting and Processing of Operations Information*, after EG&G RF completes its assessment of administrative compliance with the Order.
- c. Assess compliance with DOE Order 5480.31, *Start and Restart of Nuclear Facilities*, during the DOE Operational Readiness Review of Building 707.
- d. Review the corrective action program, when in place.

DOE ORDERS ASSESSED: Based on previous reviews conducted at Rocky Flats, seventeen Orders with the most safety significance to operations in Building 707 were reviewed. These Orders were categorized into the following functional areas:

a. Nuclear Safety and Fire Protection Orders

- 5480.5 Safety of Nuclear Facilities
- 5480.7A Fire Protection
- 5480.21 Unreviewed Safety Questions
- 5480.22 Technical Safety Requirements
- 5480.23 Nuclear Safety Analysis Reports
- 5481.1B Safety Analysis and Review System

b. Management Systems and Standards Orders

- 5000.3B Occurrence Reporting and Processing of Operations Information
- 5700.6C Quality Assurance

c. Personnel, Training, Maintenance, and Operations Orders

- 4330.4A Maintenance Management Program
- 5480.19 Conduct of Operations for DOE Facilities
- 5480.20 Personnel Selection, Qualification, Training, and Staffing at DOE Reactor and Non-Reactor Facilities

d. Emergency Preparedness Orders

- 5500.3A Planning and Preparedness for Operational Emergencies
- 5500.10 Emergency Readiness Assurance Program

e. Environmental Protection and Radioactive Waste Orders

- 5400.5 Radiation Protection of the Public and the Environment
- 5820.2A Radioactive Waste Management

f. Environmental, Safety, Health, and Radiation Protection Orders

- 5480.11 Radiation Protection for Occupational Workers
- 5482.1B Environment, Safety and Health Appraisal Program

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3. The RFO compliance report states that DOE-RFO compliance with 14 of the 15 requirements of DOE Order 5480.20, *Personnel Selection, Qualification, Training, and Staffing at DOE Reactor and Non-Reactor Facilities*, is not possible until the EG&G RF Training Implementation Matrix (TIM) is approved. The TIM was approved on September 15, 1992, however, RFO has not updated the compliance report to document completion of any further assessment. The Staff will follow-up on this concern during the planned review of RFO order compliance in February 1994.
4. EG&G RF emergency response plans, in general, meet the intent of the emergency preparedness Orders (5500 series). However, EG&G has noted that a "full" hazard assessment for Building 707, ranging from "minor accidents" to "beyond design basis accidents" is required by DOE Order 5500.3A, *Planning and Preparedness for Operational Emergencies*, and still needs to be performed. The interim response plan is based on SAR hazard assessments. EG&G has not developed a Request For Action (RFA) for this non-compliance. EG&G instead incorporated this issue into an annual program plan submission required by DOE Order 5500.10, *Emergency Readiness Assurance Program*. This submission is approved by DOE HQ.
5. No significant changes have occurred in the status of Building 707 compliance with environmental protection (DOE Order 5400.5) and waste management (DOE Order 5820.2A) order requirements since the administrative order compliance review was conducted. It should be noted that while Rocky Flats personnel believe that they are in compliance with the requirements of 40 CFR 61, Subpart H, "National Emissions Standards for Emissions of Radionuclides Other Than Radon From Department of Energy Facilities" (which is required under DOE Order 5400.5), they have not yet received concurrence from the EPA Region VIII.
6. EG&G radiological protection program meets the intent of DOE Order 5480.11, *Radiological Protection*. However, much remains to be done to implement the new DOE *Radiological Controls Manual* (DOE Notice 5480.6), scheduled to be completed by the end of 1996. The controlling path appears to be training of personnel, especially radiation protection technicians.

DNFSB: TA:ccs 2/25/94 208-6547

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