

[DNFSB LETTERHEAD]

September 30, 1991

The Honorable James D. Watkins
Secretary of Energy
Washington, D.C. 20585

Dear Mr. Secretary:

On September 30, 1991, the Defense Nuclear Facilities Safety Board, in accordance with 42 U.S.C. 2286a(5), approved Recommendation 91-4 which is enclosed for your consideration.

42 U.S.C 2286d(a) requires the Board, after receipt by you, to promptly make this recommendation available to the public in the Department of Energy's regional public reading rooms. The Board believes the recommendation contains no information which is classified or otherwise restricted. To the extent this recommendation does not include information restricted by DOE under the Atomic Energy Act of 1954, 42 U.S.C 2161-68, as amended, please arrange to have this recommendation promptly placed on file in your regional public reading rooms.

The Board intends to publish this recommendation in the Federal Register.

The Board will continue to closely follow the progress made by the contractor in correcting safety deficiencies and activities of DOE in conducting and concluding its ORR. Most importantly, the Board will be looking to assure itself that during the ORR process, and subsequently, there has been sufficient closure of safety deficiencies to "ensure adequate protection of the public health and safety" at the time of restart.

Sincerely,

John T. Conway
Chairman

Enclosure

RECOMMENDATION TO THE SECRETARY OF ENERGY
pursuant to 42 U.S.C. 2286a(5)
Atomic Energy Act of 1954, as amended.

Dated: September 30, 1991

By letter dated May 4, 1990, The Defense Nuclear Facilities Safety Board recommended that prior to the resumption of operations at Rocky Flats a comprehensive Operational Readiness Review (ORR) be carried out by a group of experienced individuals. The Board's Recommendation specified a number of items to be included in the review.

The Secretary of Energy accepted the Board's Recommendation and prepared an implementation plan that was later revised and submitted to the Board on February 15, 1991. DOE elected to conduct a separate ORR for each building that the Department proposed to bring back into operation in processing plutonium. The analytical chemistry laboratory, building 559, was chosen to be the first for resumption.

The implementation plan stipulated specific objectives that must be achieved for readiness of plant and equipment (hardware), management and personnel, and management programs (procedures, plans, etc.) prior to resumption of plutonium operations in a building. The implementation plan also required a number of specific actions to be undertaken including an EG&G program to upgrade the safety of operations, followed by a non-plutonium start-up test program and an EG&G Operational Readiness Review to confirm the adequacy of the upgrades to insure safety of operations at that building.

Although the implementation plan recognizes that the sequence for practical reasons may not be fully serial, it was intended that the plutonium start-up tests (functional and preoperational) be completed for vital safety systems equipment before the EG&G Readiness to Proceed Memorandum would be sent to DOE requesting DOE approval to commence operations, and that subsequently DOE was to conduct its own ORR.

In his August 19, 1991 letter to the President of the Senate, The Secretary reaffirmed that DOE's ORR will be carried out in accordance with the implementation plan approved by the DNFSB. The Contractor, DOE, and the Board have each recognized that this first ORR conducted at Rocky Flats will establish an important precedent for future ORR's, both at Rocky Flats and other defense nuclear facilities.

The Board has been carefully following EG&G's and DOE's implementation of the ORR process. The Board's staff and expert consultants have observed portions of the ORR while they were being conducted. The Board is satisfied that the DOE established an ORR team with competent independent experts capable of providing confidence that the findings would be technically sound and unbiased.

While the plan recognized that some steps in the DOE ORR might begin before the EG&G Readiness to Proceed Memorandum was issued, an ORR cannot properly be undertaken without

progress toward resumption of operations sufficient to establish that the safety objectives have been met or an acceptable plan with reasonable schedules exists for meeting them. The purpose of an ORR for Rocky Flats as stated in the letter from the Secretary accepting Recommendation 90-4, is "to verify the readiness of the Rocky Flats plant to safely resume plutonium operations". If conducted prematurely, an ORR is weakened in accomplishing its purpose. It tends to lose its ability to provide independent confirmation of a state of readiness, subject to planned actions, and becomes instead an adjunct to management in identifying important areas of concern requiring further attention.

The Board finds that the DOE ORR conducted during the period June 28 to July 24 was premature and incomplete, and thus it failed to adhere adequately to the prerequisites established by the Secretary in the Implementation Plan for Recommendation 90-4. DOE conducted the ORR before sufficient progress was made by EG&G toward resumption of plutonium operations to enable performance of an adequate DOE ORR. For example, EG&G's self-assessment of compliance with safety-related DOE orders was in such a preliminary stage that when DOE's team began its ORR it was unable to conduct an evaluation of order compliance.

During the Board's public hearing in Boulder, Colorado on August 24, 1991, DOE reiterated the finding of its ORR report that building 559 is not yet ready for resumption of plutonium operations. We agree with this conclusion. Work previously planned by EG&G had not been completed at the time of DOE's ORR and the completion process was not fully developed. Therefore, the DOE ORR team was unable to complete its review in some areas and was unable to begin such a review in others.

To ensure that its meaning is properly understood, the Board affirms that safety in a complex operation such as that at the Rocky Flats Plant rests on layered safety features that comprise a defense in depth. This permits safety to be achieved even when some safety provisions are imperfectly accomplished. Therefore the Board is not objecting to the ORR on the grounds that inadequacies were found; some could always be present. The Board finds that an adequate Operational Readiness Review, to confirm existence of an adequate level of safety at the planned time of operations, could not be performed at the time of DOE's review. DOE was unable to adequately address specific Board requirements set forth in Recommendation 90-4 and the review itemized safety deficiencies still existing in seven major categories. DOE recognizes that it has not completed an adequate ORR for Building 559, and will have to schedule further action toward this end prior to resumption of plutonium operations in the building.

Its independent observations and the information it had obtained in the course of numerous briefings (two of them public) cause the Board to agree with EG&G and DOE and their experts that the plutonium operations in building 559 can be resumed without risk to persons off site. However, while a number of corrective actions were identified, it still remains to be confirmed that workers on site will be adequately protected.

Since DOE has stated that the ORR of building 559 will set the standard for the following buildings, it is essential that before operations with plutonium are resumed, this first ORR be performed in a manner that properly adheres to the implementation Plan submitted to the Board.

Accordingly, the Board recommends that:

1. A DOE ORR team, including a Senior Advisory Group, using as many as may still be available of the original members, complete the ORR for building 559, but only when (a) DOE has adequate reason to believe that the deficiencies it has identified during its original ORR have been corrected or are appropriately near closure with credible timetables toward closure, and (b) EG&G has issued a Readiness to Proceed Memorandum requesting DOE approval for resumption of plutonium operations in the building, subject to scheduled elimination of the deficiencies.
2. The DOE ORR team continue its review consistent with the requirement of the Recommendation 90-4, and its implementation plan. Namely that the review be structured to include, but not be limited to, the following items:
 - o Independent assessment of the adequacy and correctness of process and utility systems operating procedures. Consistent with the contractor's operating philosophy, these procedures should be in sufficient detail to permit the use of the "procedural compliance" concept.
 - o Assessment of the level of knowledge achieved during operator requalification as evidenced by review of examination questions and examination results, and by selective oral examinations of operators by members of the review group.
 - o Examination of records of tests and calibration of safety systems and other instruments monitoring Limiting Conditions of Operation or that satisfy Operating Safety Requirements.
 - o Verification that all plant changes including modifications of vital safety systems plutonium processing workstations have been reviewed for potential impact on procedures, training and requalification, and that training and requalification have been done using the revised procedures.
 - o Examination of each building's Final Safety Analysis Report to ensure that the description of the plant and procedures and the accident analysis are consistent with the plant as affected by safety related modifications made during the outages period.
 - o The DOE ORR team include in its final report a description of remaining issues which require closure, if any, and an overall conclusion of readiness for Building 559 to resume operations.

EG&G and DOE complete their assessment of compliance with DOE safety orders at Building 559, and their implementation of any compensatory measures that may be needed to achieve the objectives of compliance, as necessary and appropriate for resumption of plutonium operations in Building 559.

John T. Conway, Chairman