

John T. Conway, Chairman  
A.J. Eggenberger, Vice Chairman  
Joseph J. DiNunno  
John E. Mansfield

# DEFENSE NUCLEAR FACILITIES SAFETY BOARD

625 Indiana Avenue, NW, Suite 700, Washington, D.C. 20004-2901  
(202) 694-7000



October 15, 2001

The Honorable Robert Gordon Card  
Under Secretary of Energy, Science and  
Environment  
1000 Independence Avenue, SW  
Washington, DC 20585-1000

Dear Mr. Card:

The Department of Energy's Oak Ridge Operations Office (DOE-ORO) reviewed the implementation of Bechtel Jacobs Company's (BJC) Integrated Safety Management (ISM) System in February 2000. That review identified numerous issues associated with the development of and adherence to authorization bases, the absence of nuclear safety orders from the Work Smart Standards (WSS), and the lack of clear definition of and competence to execute roles and responsibilities within both DOE-ORO and BJC. In October 2000, DOE-ORO conducted a follow-up review that closed 40 of the 50 original findings but identified 25 more, many of which related to the same three areas identified in the February 2000 review. On November 7, 2000, the DOE-ORO Manager declared BJC's ISM program implemented, subject to BJC's completing additional corrective actions.

The Defense Nuclear Facilities Safety Board (Board) staff recently conducted a review of defense nuclear facilities operated by BJC. The staff found that many of the deficient conditions cited in the above reports on ISM implementation remain uncorrected. For example, as of October 1, 2001, neither DOE-ORO nor BJC had compiled a complete list of their authorization basis documents—18 months after this condition was highlighted by DOE's ISM review and supposedly corrected by BJC. Absent a comprehensive set of safety controls and supporting safety analyses, it is not credible to assert that the public, workers, and the environment are protected from the hazards of these facilities.

Many of the above deficiencies exist because DOE-ORO and BJC have not complied with the relevant DOE safety directives. A review of BJC's WSS revealed that many DOE orders important to nuclear safety are not requirements in the BJC contract, but instead are cited as guidance. This is the case despite the fact that DOE Order 5480.23, *Nuclear Safety Analysis Reports*, explicitly requires DOE field contracting officers to ensure that "all paragraphs of the Order shall be applied to contractors . . ."

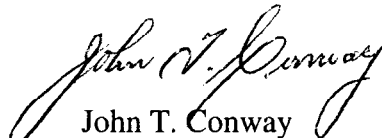
The Board is concerned that this failure to apply nuclear safety requirements and the apparent significant misunderstanding or abdication of attendant responsibilities could exist in DOE more than 8 years after most of the nuclear safety orders were promulgated. The Board considers this failure to be an indication that the ISM Systems of DOE-ORO and BJC are not functioning, especially in the area of feedback and improvement.

The safety implications of this situation demand an independent examination and prompt resolution. Therefore, pursuant to 42 U.S.C. § 2286b(d), the Board requests that DOE provide a report within 45 days of receipt of this letter that encompasses the following key elements:

- A DOE-Headquarters independent assessment, with appropriate expertise, of the adequacy of the authorization basis and safety posture for each of BJC's defense nuclear facilities. Since inadequate hazard classifications for BJC facilities have previously been identified, and the guidance for facility classification in DOE directives may not have been followed, DOE should also address BJC's radiological facilities in this assessment. The report should include a determination of the safety of ongoing operations and Justifications for Continued Operation as appropriate.
- A list of the applicable DOE orders of interest to the Board (see enclosure) and the rationale for those not included as requirements in the WSS set of the BJC contract.
- An evaluation of the effectiveness of the ISM Systems of BJC and DOE-ORO. This evaluation should include an assessment of whether the declaration of ISM implementation at DOE-ORO and BJC was premature; whether that declaration should be revoked; and if so, what corrective actions should be taken to ensure full implementation of ISM at both DOE-ORO and BJC.
- An assessment of the flowdown of responsibilities for technical direction (including those for authorization bases) from the DOE directives to DOE-ORO's Office of Environmental Management. This assessment should include a determination of whether DOE-ORO has the specific technical expertise in place to meet those responsibilities. Where that expertise does not exist, the compensatory measures to be implemented and the actions necessary to eliminate the need for those compensatory measures should be described.

The Board further requests that DOE brief the Board on the contents of the above report once it is completed and quarterly thereafter, until DOE-Headquarters has validated closure of all corrective actions.

Sincerely,

  
John T. Conway  
Chairman

c: The Honorable Jessie Hill Roberson  
Mr. James F. Decker  
Ms. Gertrude Leah Dever  
Mr. Mark B. Whitaker, Jr.

Enclosure

## Orders of Interest to the Board

### Group 1. Currently Active Orders

Order Number	Title
O151.1A	Comprehensive Emergency Management System
O210.1, Chg 2	Performance Indicators and Analysis of Operations Information
O225.1A	Accident Investigations
O231.1, Chg 2	Environment, Safety, and Health Reporting
O232.1A	Occurrence Reporting and Processing of Operational Information
O251.1A	Directives System
O252.1	Technical Standards Program
O360.1A	Training
O413.3	Program and Project Management for the Acquisition of Capital Assets
O414.1A	Quality Assurance
O420.1, Chg 3	Facility Safety
O425.1B	Startup and Restart of Nuclear Facilities
O430.1A	Life Cycle Asset Management
O433.1	Maintenance Management Program for DOE Nuclear Facilities
O435.1	Radioactive Waste Management
O440.1A	Worker Protection Management for DOE Federal and Contractor Employees
O442.1A	Department of Energy Employee Concerns Program
O451.1B	National Environmental Policy Act Compliance Program
O452.1B	Nuclear Explosive and Weapon Surety Program
O452.2B	Safety of Nuclear Explosive Operations
O460.1A	Packaging and Transportation Safety
O460.2, Chg 1	Departmental Materials Transportation and Packaging Management
O461.1	Packaging and Transfer or Transportation of Materials of National Security Interest

Order Number	Title
O470.2A	Security and Emergency Management Independent Oversight and Performance Assurance Program
O474.1A	Control and Accountability of Nuclear Materials
O3790.1B	Federal Employee Occupational Safety and Health Program
O4700.1, Chg 1	Project Management System
O4700.4	Project Manager Certification
O5400.1, Chg 1	General Environmental Protection Program
O5400.5, Chg 2	Radiation Protection of the Public and the Environment
O5480.4, Chg 4	Environment Protection, Safety, and Health Protection Standards
O5480.19, Chg 1	Conduct of Operations Requirements for DOE Facilities
O5480.20A	Personnel Selection, Qualification, Training and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities
O5480.21	Unreviewed Safety Questions
O5480.22, Chg 2	Technical Safety Requirements
O5480.23, Chg 1	Nuclear Safety Analysis reports
O5480.30, Chg 1	Nuclear Reactor Safety Design Criteria
O5530.1A, Chg 1	Accident Response Group
O5530.2	Nuclear Emergency Search Team
O5530.3, Chg 1	Radiological Assistance Program
O5530.4	Aerial Measuring System
O5600.1	Management of the Department of Energy Weapon Program and Weapon Complex
O5632.1C	Protection and Control of Safeguards and Security Interests
O5660.1B	Management of Nuclear Materials
O6430.1A	General Design Criteria

## Orders of Interest to the Board

### Group 2. Archived or Deleted Orders of Interest to the Board That May Be Cited in Current Contracts

Order Number	Title
O1300.2A	Department of Energy Technical Standards Program
O1360.2B	Unclassified Computer Security Program
O1540.2, Chg 1	Hazardous Material Packaging for Transport - Administrative Procedures
O1540.3A	Base Technology for Radioactive Material Transportation Packaging Systems
O4330.4B	Maintenance Management Program
O5000.3B, Chg 1	Occurrence Reporting and Processing of Operations Information
O5400.2A Chg 1	Environmental Compliance Issue Coordination
O5400.3	Hazardous and Radioactive Mixed Waste Program
O5400.4	Comprehensive Environmental Response, Compensation, and Liability Act Requirements
O5440.1E	National Environmental Policy Act Compliance Program
O5480.1B, Chg 5	Environmental, Safety and Health Program for DOE Facilities
O5480.3	Safety Requirements for the Packaging and Transportation of Hazardous Materials, Hazardous Substances, and Hazardous Wastes
O5480.5, Chg 2	Safety of Nuclear Facilities
O5480.6	Safety of Department of Energy-Owned Nuclear Reactors
O5480.7A	Fire Protection
O5480.8A, Chg 2	Contractor Occupational Medical Program
O5480.9A	Construction Safety and Health Program
O5480.10	Contractor Industrial Hygiene Program
O5480.11	Radiation Protection for Occupational Workers
O5480.15	Department of Energy Laboratory Accreditation Program for Personnel Dosimetry
O5480.17	Site Safety Representatives
O5480.18B	Nuclear Facility Training Accreditation Program
O5480.24	Nuclear Criticality Safety

<b>Order Number</b>	<b>Title</b>
O5480.25	Safety of Accelerator Facilities
O5480.26	Trending and Analysis of Operations Information Using Performance Indicators
O5480.28	Natural Phenomena Hazards Mitigation
O5480.29	Employee Concerns Management System
O5480.31	Startup and Restart of Nuclear Facilities
O5481.1B, Chg 1	Safety Analysis and Review System
O5482.1B, Chg 1	Environment, Safety, and Health Appraisal Program
O5483.1A	Occupational Safety and Health Program for DOE Contractor Employees at Government-Owned Contractor-Operated Facilities
O5484.1B	Environmental Protection, Safety and Health Protection Information Reporting Requirements
O5500.1B	Emergency Management System
O5500.2B, Chg 1	Emergency Categories, Classes, and Notification and Reporting Requirements
O5500.3A, Chg 1	Planning and Preparedness for Operational Emergencies
O5500.4A	Public Affairs Policy and Planning Requirements for Emergencies
O5500.7B	Emergency Operating Records Protection Program
O5500.10	Emergency Readiness Assurance Program
O5610.10	Nuclear Explosive and Weapon Safety Program
O5610.11	Nuclear Explosive Safety
O5610.12	Packaging and Offsite Transportation of Nuclear Components, and Special Assemblies Associated with the Nuclear Explosive and Weapon Safety Program
O5632.11	Physical Protection of Unclassified Irradiated Reactor Fuel in Transit
O5700.6C, Chg 1	Quality Assurance
O5820.2A	Radioactive Waste Management

## Orders of Interest to the Board

### Group 3. Related Documents Setting Forth Safety-Related Requirements

Document Number	Title
N203.1	Software Quality Assurance
P410.1A	Promulgating Nuclear Safety Requirements
P411.1	Safety Management Functions, Responsibilities and Authorities
P426.1	Federal Technical Capability for Defense Nuclear Facilities
P441.1	Radiological Protection for DOE Activities
P450.1	Environment, Safety, and Health Policy for the Department of Energy Complex
P450.2A	Identifying, Implementing, and Complying with ES&H Requirements
P450.3	Authorizing Use of the Necessary and Sufficient Process for Standards-Based Environment, Safety and Health
P450.4	Safety Management System Policy
P450.5	Line Environment, Safety and Health Oversight
P450.6	Secretarial Policy Statement on Environment, Safety, and Health
10CFR820	Procedural Rules for DOE Nuclear Activities
10CFR830, Subpart A	Quality Assurance Requirements
10CFR830,Subpart B	Safety Basis Requirements
10CFR834	Radiation Protection of the Public and the Environment
10CFR835	Occupational Radiation Protection
48CFR970.5204-2	Laws, Regulations, and DOE Directives
48CFR.5215-3	Conditional Payment of Fee, Profit, or Incentives
48CFR.5223-1	Integration of Environment, Safety, and Health Into Work Planning and Execution
Various	DOE Manuals, Guides, Handbooks, and Technical Standards Associated with Safety Management