DEFENSE NUCLEAR FACILITIES SAFETY BOARD

625 Indiana Avenue, NW, Suite 700, Washington, D.C. 20004
(202) 208-6400 • FTS 268-6400

July 7, 1992

The Honorable James D. Watkins
Secretary of Energy
1000 Independence Avenue, S.W.
Washington, D.C. 20585

Dear Mr. Secretary:

A group comprised of nine Board staff members and outside experts recently carried out an assessment of the implementation of Board Recommendations 90-2 (issued March 8, 1990) and 91-1 (issued March 7, 1991) at the Y-12 Plant in Oak Ridge. A copy of their report is enclosed.

The report identifies numerous deficiencies at Y-12 in the implementation of both of the Recommendations. As you will recognize, the implications of these deficiencies may well extend beyond Y-12 to facilities at other sites under the cognizance of the Assistant Secretary of Defense Programs (DP) as well as those under the Office of Environmental Restoration and Waste Management (EM).

This report is being provided to you for whatever actions you may deem necessary.

Sincerely,

John T. Conway
Chairman

Enclosure

c:
Hon. Richard A. Claytor, DP-1
Hon. Leo P. Duffy, EM-1
Hon. William H. Young, NE-1
Mr. Victor Stello, Jr., DP-6
Mr. Steven M. Blush, NS-1

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 29, 1992

MEMORANDUM FOR: Board Members
G. W. Cunningham, Technical Director

FROM: Robert F. Warther

SUBJECT: DNFSB Technical Staff Report on Implementation of Board Recommendations 90-2 and 91-1 at the Y-12 Plant

Purpose: The DNFSB staff and outside experts met with DOE HQ, Site Office, and MMES personnel to assess the implementation of Recommendations 90-2 and 91-1 at the Y-12 Plant in Oak Ridge during the period June 22, 1992 through June 24, 1992.

Summary: The following summarizes the results of the visit to the Y-12 Plant. Detailed observations and conclusions are provided following this summary.

RESULTS OF RECOMMENDATION 90-2 Recommendation 90-2 is divided into (1) identify specific standards that apply to DOE facilities, (2) assess the adequacy of the standards identified, and (3) determine the extent to which the standards have been implemented. These three actions are to be conducted for standards, including Department Orders, regulations, and requirements. At the Y-12 Plant, the actions in the Recommendation and the envelope of standards used to protect public health and safety are applicable to the DOE Offices of (1) Defense Programs (DP), (2) Environmental Restoration and Waste Management (EM), (3) the DOE Site Office (under the cognizance of DP), (4) Martin Marietta Energy Systems (MMES), and (5) MK Ferguson. The DNFSB staff's review focused on the identification, assessment for adequacy, and extent of implementation of DOE Orders by the DOE Site Office and MMES. The degree of compliance with regulations, requirements, and consensus standards was not reviewed by the Board's staff because neither the Site Office nor MMES could provide evidence that they had conducted a requirement by requirement assessment to identify, assess the adequacy, and determine the extent of implementation for these standards. Site Office and MMES personnel stated that DOE HQ (DP) had directed the approach to focus on DOE Orders. DOE-EM and MK Ferguson's implementation of Board Recommendation 90-2 was not reviewed because these two organizations have not yet implemented Board Recommendation 90-2 at the Y-12 Plant.

DOE (DP) has established a Requirements Self-Assessment Database (RSAD). This database is being used by HQ, Field Office, and MMES personnel for two purposes. First, it subdivides each DOE Order into its individual requirements. Second, based on the individual Order requirements applicabilities (HQ, Field Office, contractor), the RSAD provides input and output reports of compliance for each requirement. DOE HQ stated that this database will not be expanded to contain additional standards (e.g., laws, statutes, regulations, ANSI standards). A review of paragraph 3.0 of Attachment I to the Recommendation 90-2 Implementation Plan appears to require otherwise, though the 90-2 Recommendation Implementation Plan is not clear on this point. DOE Site Office and MMES personnel were asked to explain their understanding concerning the long-term use(s) for this database. Their response was that DOE HQ had not

informed them of any future plans to use this database for standards other than DOE Orders. In any event, specific information concerning this potential expansion effort, (e.g., who would be responsible, when this would occur, which standards would be implemented) was not available.

Identification. Little information was presented to show how DOE or MMES is working toward the goal of identifying and implementing consensus standards in the field. Site Office and MMES personnel were not clear how rules, regulations, and standards should be identified for implementation. DOE HQ's role to identify and evaluate consensus standards for site and facility applicability was not clear, nor is its role clearly defined based on a review of Section 1.4.(1) of the Recommendation 90-2 Implementation Plan.

Assessment for Adequacy. Both DOE Site Office and MMES personnel stated that they were performing compliance assessments against the Order requirements provided by DOE HQ. No process to assess or question Order adequacy was evident. This seems to conflict with DOE's Recommendation 90-2 Implementation Plan, which states that Subject Matter Experts (SMEs) are used "...to evaluate the adequacy of DOE Orders at each site and at specific facilities at these sites." Site Office and MMES personnel were not aware of any efforts by DOE to provide SMEs to evaluate Order adequacy.

Implementation - new definitions. Both DOE Site Office and MMES personnel have applied substantial effort to determine the status of implementation of the DOE Orders. However, this effort will be of limited value, because several definitions and categories of compliance have been changed. For example, the definition of full compliance now includes "A request for approval or compliance document implementation plan exists and the corrective action schedule is being met." In response to a question by the DNFSB staff concerning this definition, both DOE HQ and Site Office personnel stated that this definition of full compliance was accepted by DOE.

DOE also used a new category of compliance titled *deficiency*. This category or definition of compliance apparently was recently established. Some Order assessments used the term *deficiency* to describe the status of compliance and listed deficiencies in the RSAD database. Other Order assessments did not use this term. In general, the Y-12 Site Office and MMES personnel were not familiar with either the term or its application.

RESULTS OF RECOMMENDATION 91-1 The following was observed by the Board's staff concerning implementation of Recommendation 91-1:

1. DOE established a Directives Management Group (DMG) to coordinate directives and compliance activities. The qualifications of this group do not meet the intent of Recommendation 91-1.

2. Some orders have been available for nearly six months, but are only now being assessed for adequacy and implementation. DOE HQ requires 2-3 months to reproduce and mail new Orders to the field following signature by the Secretary. The Board's staff concludes that DOE HQ and the Site Office need a greater sense of urgency concerning implementation of Orders important to health and safety.

3. The process of issuing an Order, assessing its adequacy, developing an Order implementation plan, providing for a DOE (Site Office and HQ) review and approval, and scheduling specific milestones for implementation could take as long as one and a half to two years.

USE OF FIELD OFFICE ORDERS The DOE/MMES contract contains an Appendix E which lists the standards to be imposed on the contractor. The list contains most of the DOE Orders, including the Orders of interest to the DNFSB. It also contains many ORO Field Orders, and some SENs. DOE Site Office personnel stated that the inclusion of ORO Field Office Orders is consistent with the February 1991 Tuck memo concerning Field Office Orders. Site Office personnel stated that the purpose of the memo was to conduct a review at the site level for conflicts, and retain the Orders if the Site Office determined that a conflict did not exist between the HQ Order and the Field Office Order.

The ORO Orders are being converted to Oak Ridge Implementation Guides (ORIGs). The staff compared only a limited number of ORIGs against the parent DOE Order. Those reviewed were nominally acceptable, although some errors were noted.

GRADED APPROACH The MMES program for prioritizing work involves assigning points for elements such as hazard and good business practices. MMES management stated that it was possible for the points assigned to good business practices to outweigh the points assigned to a significant safety issue using their system. This could result in a safety issue not being implemented or addressed in favor of a business practice.

DOE's current method of risk assessment and budget allocation at the Y-12 Plant could result in a situation where different facilities or tasks (e.g., construction vs. maintenance) potentially have varying risks to public health and safety based on budget only. By extension, DOE's failure to establish risk assessment methodologies and implement a configuration management Order could result in risks that vary with budget across different sites in the complex.

DOE TECHNICAL VIGILANCE DOE has not fully implemented Recommendations 90-2 and 91-1 in the field. Two problems were apparent. First, the self assessments by DOE were weak. DOE HQ has not performed an assessment of Order compliance. The assessment performed by the DOE Site Office was cursory, and contained several deficiencies. Conversely, the effort to assess Order compliance by MMES was reasonably thorough, and reflected a good effort.

Second, there was no evidence that DOE had reviewed the MMES results. In general, DOE had not asked MMES to prepare compensatory measures, exemptions, CSAs, or STCSs. DOE maintained that the Order implementation schedule contained compensatory measures, and schedule information. The implementation schedules reviewed by the staff did contain schedule information, but no means to evaluate the schedule was provided. Some of the Order implementation plans were reviewed in detail by the staff, and on several occasions, MMES was not meeting the schedule. Compensatory measures generally were not utilized in the Order implementation schedule. These deficiencies indicate that compliance with Orders and standards is not yet a way of operating and maintaining the Plant for DOE and its contractors, but rather a task that must be periodically completed to satisfy external requirements.

Background. The DNFSB was established on September 29, 1988 by the passage of Public Law 100-456 which is the National defense Authorization Act for Fiscal Year 1989. The law states that "The Board shall perform the following functions:

> "(1) REVIEW AND EVALUATION OF STANDARDS. - The Board shall review and evaluate the content and implementation of the standards relating to the design, construction, operation, and decommissioning of defense nuclear facilities of the Department of Energy (including all applicable Department of Energy orders, regulations, and requirements) at each Department of Energy defense nuclear facility. The Board shall recommend ... those specific measures that should be adopted to ensure that public health and safety are adequately protected. The Board shall include in its recommendations necessary changes in the content and implementation of such standards, as well as matters on which additional data or additional research is needed."

The legislation also places a requirement on the Board to make recommendations to the Secretary of Energy. On March 8, 1990, the Board issued Recommendation 90-2. This recommendation states:

- That the Department identify the specific standards which it considers apply to the design, construction, operation and decommissioning of defense nuclear facilities
- That the Department provide its views on the adequacy of the standards identified in the above process for protecting public health and safety, and
- That the Department determine the extent to which the standards have been implemented at these facilities.

On March 7, 1991, the Board issued Recommendation 91-1. This Recommendation contained seven specific considerations for the Secretary of Energy. The Secretary of Energy accepted both these Recommendations. Based on the legislation and the Secretary's acceptance of the Board's Recommendations, the Board staff reviewed the implementation of Recommendations 90-2 and 91-1 at the Y-12 Plant. The agenda for this review is included as Attachment I.

Discussion

1. Graded Approach. Several DOE Orders specify a graded approach to operation of the facilities (e.g., DOE Order 4330.4A "Maintenance Management Program", DOE Order 5480.19 "Conduct of Operations"). Several impediments to implementation of a graded approach were apparent.

a. Risk assessment standards, approaches and programs have not been levied on the contractors by DOE. It is not clear how DOE can justify imposing a graded approach to operations and maintenance without first developing a standard or methodology for risk assessment.

b. DOE Site Office personnel declared that they had established a graded approach to maintenance at the Y-12 Plant. When asked for documentation to support this

assertion, they stated that MMES was responsible for developing the graded approach, and had done so in the Maintenance Management Program Order implementation plan. Site Office personnel also stated that no configuration management program exists at the Y-12 Plant. The DNFSB staff questioned how a graded approach could exist without a risk assessment methodology and configuration management program. The Y-12 Site Office personnel responded by saying that it was not their responsibility to develop either a risk assessment methodology or configuration management requirements. This was the responsibility of MMES.

c. The MMES program for prioritizing work involves assigning points for items such as hazard and good business practices. Following a ranking of the risk-calculated jobs, the "budget line is then drawn." Those priorities above the line are completed or implemented, and those below the line are deferred. MMES management stated that it was possible for the points assigned to good business practices to outweigh the points assigned to a significant safety issue using their system. This could result in a safety issue not being implemented or addressed in favor of a business practice.

Based on comments 1.b and 1.c, it is evident that two similar projects could be implemented differently among the PSOs. For example, a project could fall "above" the DP funding line and be implemented. The same project in an EM-operated facility might not be implemented because it falls "below" the budget-cut line. This could result in confusion to workers (such as construction and maintenance personnel) who move from one project to another across the site. More significantly, it means that different facilities potentially have varying risks to public health and safety based on budget. By extension, DOE's failure to establish risk assessment methodologies and implement a configuration management Order could result in risks that vary with budget across different sites in the complex.

2. **DOE Technical Vigilance.** DOE's technical vigilance at the Site needs to be improved.

a. An adequate effort to implement Recommendations 90-2 and 91-1 is not being applied by DOE EM.

b. Y-12 Plant personnel rely on the OR Field Office for a great deal of support in the ES&H arena, and the Site Office has no authority over EM activities occurring at the Y-12 Plant.

c. MK Ferguson has no responsibility to review DOE Orders or assess compliance. More significantly, neither personnel in the DP organization (HQ or Site Office) nor MMES personnel were aware of the MK Ferguson requirements for Order compliance.

d. DOE Draft Order 5480.CRIT has not yet been issued for implementation. The MMES criticality staff voiced significant concern with regard to technical competency of the DOE HQ staff preparing this order. Presently, the governing order is sections 10 and 11 of DOE Order 5480.5.

e. A memo from the Field Office to DOE DP Headquarters stated that a line by line

assessment of DOE Orders 6430.1A "General Design Criteria" and 4700.1 "Project Management System" is not required. The staff did not identify any other DOE Orders with this type of arrangement. No objective evidence for compliance with any individual Order requirement could be found.

f. There are no procedures in place for obtaining PSO approval and NS concurrence for authorization of activities, operations, and modifications which involve a USQ.

3. Implementation of Recommendation 90-2. Defense Programs efforts to implement Recommendation 90-2 have been directed at DOE Order compliance. Conversely, the Office of Environmental Restoration and Waste Management has not presented any evidence of determining the status of Order compliance. The following deficiencies were noted in DOE's implementation of Board Recommendation 90-2.

a. Both the Site Office and MMES stated that they have implemented the requirements stemming from laws and statutes. However, the identification of applicable laws and statutes, and evidence of this implementation were not presented to the DNFSB staff. The database used to identify requirements for the field did not contain laws, statutes, or standards other than the DOE-HQ Orders. As a result, when reviewed on a requirement by requirement basis, the Site Office and MMES have identified, assessed, and determined the extent of implementation for DOE Orders only. Site Office and MMES personnel stated that DOE HQ had directed this approach.

b. DOE HQ (DP) developed a Requirements Self-Assessment Database (RSAD) to evaluate Order compliance. This database is being used by HQ, Site Office, and MMES personnel. The database performs two major functions. First, it subdivides each DOE Order into its individual requirements and allows the user to annotate each requirement for applicability to DOE HQ (HQ), the Field Office (FO), and/or the contractor (CO). Second, based on the individual order requirements applicabilities to DOE-HQ, the Field Office, or the contractor, the RSAD provides input and output reports of compliance for each requirement. A data field is included to enter supporting evidence of compliance. This system appears to be a good start toward a standard approach by DOE to identify and assess compliance against DOE Orders only. However, the RSAD is not yet an effective management tool. Several issues were noted with this system:

   i. The long range purpose of RSAD is not clear. During a brief to DNFSB staff personnel, DOE HQ stated that RSAD will be updated regularly with new DOE Orders and revisions to Orders. Furthermore, the plans are to require the Field Offices and contractors to update the status of order compliance on a frequent (e.g., quarterly) basis. According to Y-12 Site Office and MMES, the system originally was developed to capture a single datapoint for order compliance at the site. This effort was completed by January, 1992. Since that initial data capture, no significant order compliance updates to the database have been performed by either the Site Office or MMES. Both the Site Office and MMES stated that there were no current plans for further updates.

ii. During discussions among the DNFSB staff, DOE, and MMES, DOE HQ stated that this database will not be expanded to contain additional standards (e.g., laws, statutes, regulations, ANSI standards). A review of paragraph 3.0 of Attachment I to the Recommendation 90-2 Implementation Plan appears to require otherwise, though the 90-2 Recommendation Implementation Plan is not clear on this point. DOE Site Office and MMES personnel were asked to explain their understanding concerning the long-term use(s) for this database. Their response was that DOE HQ had not informed them of any future plans. In any event, specific information concerning this potential expansion effort, (e.g., who would be responsible, when this would occur, which standards would be implemented) was not available. If the intent is to include other standards in the database, the DNFSB staff will review the methodologies that will be used to identify standards, their associated requirements, and how these requirements will be communicated to the Field Offices and contractors. Specific information concerning this effort, (e.g., who would be responsible, when this would occur, which standards would be implemented) was not available, and will be included in future reviews as necessary.

iii. DOE's Recommendation 90-2 Implementation Plan states that SMEs will be used "...to evaluate the adequacy of DOE Orders at each site and at specific facilities at these sites." Site Office and MMES personnel were not aware of any efforts by DOE to provide or designate SMEs to evaluate Order adequacy.

iv. The DOE Site Office and MMES managers who were responsible for assessing the status of Order compliance at the Y-12 Plant generally were individuals assigned to the line organization. These individuals generally were not aware of the procedure(s) used to update the RSAD database. In general, they were not aware of the existence of the database or its purpose. This is indicative that the program has not been fully integrated into the DOE Order assessment and compliance process.

v. In many cases, the Site Office personnel had not seen data within the database prior to our visit. This further substantiates the premise that the use of the RSAD database has not been integrated into the DOE Order assessment and compliance process.

vi. In many cases, the Site Office personnel had not verified the information contained in the RSAD printouts. This suggests that the quality assurance procedures have not been adequately utilized.

vii. The time lag to enter new Orders and their associated requirements into RSAD for evaluation appears excessive. For example, DOE Orders 5480.21 (Unreviewed Safety Questions) and 5480.22 (Technical Safety Requirements) were signed out by the Secretary of Energy on 12/24/91 and 2/25/92, and were effective immediately. Neither the requirements of these Orders nor the status of compliance was reflected in the RSAD database.

viii. Some requirements contained in the DOE Orders were not listed in the database. In other cases, the requirements were quoted based on a word search (e.g., the word "shall"), and the meaning of the requirement was lost because it was taken out of context from the remainder of the paragraph or section. Examples include:

(1) DOE Order 5480.7 Fire Protection contains requirements in the definitions section of the Order which were not included in the database list of requirements.

(2) Paragraph 8.b.(7)[2] of the RSAD database for DOE Order 5000.3A "Occurrence Reporting and Processing of Operations Information" states "They shall also interact with the contractor and Field Organization oversight organizations as necessary and inform and advise their respective management of their findings." The response to this requirement began with the statement "While this statement borders on being unintelligible, ..."

This problem is easily corrected across the complex if the requirements portion of the database is updated and the information distributed to the Field Offices and M&O contractors.

ix. Some requirements applicabilities as reflected in the RSAD database were inconsistent with the requirements stated in the DOE Orders. For example, Paragraphs 10.e. (1) and (2) of DOE Order 5700.6C state that "DOE Field Office Managers have the following responsibilities: ..." The RSAD database indicates that these requirements are not applicable to the Field Office.

This problem can also be corrected across the complex easily if the requirements portion of the database is corrected and the corrections are distributed to the Field Offices and M&O contractors in the complex.

x. In some cases, the Site Office and MMES used the DOE Order requirements as entered by DOE HQ in the database as the only source of Order requirements, without examining the referenced Order. This approach brings into question the validity of the compliance review for those Orders. For example,

(1) The text in DOE Orders 5480.1B "Environment, Safety and Health Program" and 5480.4 "Environmental Protection, Safety and Health Protection Standards" has not been compared with information in the database by either the Site Office or MMES. In several instances, the information in the database does not accurately reflect the material in the Order.

(2) None of the mandatory national consensus codes and standards contained within DOE Order 5480.4 "Environmental Protection, Safety and Health Protection Standards" has been assessed by the Site Office.

4. **New Order Compliance Definition.** During the Monday afternoon presentation to the DNFSB staff, DOE HQ and the Y-12 Site Office presented information concerning the approach to Order compliance (implementation). The approach used at the Y-12 Plant differed from that used at the Rocky Flats Plant and Savannah River Site in two ways. First, the definition of full compliance has been modified in a non-conservative fashion. Second, a new category of compliance (or non-compliance) called *deficiency* has been developed.

The definition of full compliance as reported by MMES is:

a. All provisions of a requirement are fully and adequately addressed in existing documentation [policies, standards, procedures, records or program plans] and that no known pervasive implementation problems exist.

or

b. An application exists which satisfies the intent of the statement.

or

c. A request for approval or compliance document implementation plan exists and the corrective action schedule is being met.

In response to a question by DNFSB staff concerning this definition, both DOE HQ and Site Office personnel stated that these definitions of full compliance were accepted by DOE. The Board's staff has requested a memorandum from DOE HQ to the Site Office that contains this definition. MMES did not use definition b. of full compliance for any of the DOE orders evaluated by the Board's staff during this trip.

The approach espoused in definition c. will result in compliance with order requirements when in actuality only a *schedule* for compliance exists. If the Order implementation plan addressed each individual requirement in an Order, and the contractor reported to DOE on a requirement by requirement basis, this method would be effective. However, the Order implementation plans are not written to address each order requirement for each facility at a site. Therefore, no means to determine the status of implementation at a site or facility exists using this approach.

It was not clear from the presentations how MMES personnel have used or plan to use these definitions of full compliance. In the MMES self-assessment of implementation of DOE Order 5480.5, there were many examples of an approved Order implementation plan and schedule being tracked as full compliance. In other cases, for example, DOE Order 5480.19 "Conduct of Operations", DOE Order 5480.5 "Selection, Training, and Qualification", and DOE Order 4340.4A "Maintenance Management Program", MMES managers considered their areas to be not fully in compliance, even though the Site Office had approved the Order implementation schedules, and MMES was on schedule. MMES generally took the more conservative view that full compliance is not achieved until all actions have been scheduled and completed.

The second difference between the Y-12 Plant and Rocky Flats Plant (or Savannah River Site) approaches was that another category of compliance titled *deficiency* was in use at the Y-12

Plant. According to the definition, a deficiency exists when:

- The [DOE Order] statement does not specifically require that the activity be controlled by a formal document; however, documentation is perceived to be necessary

and

- Observations and records show that the requirement statement is met

and

- No formal documentation exists to control the activity.

This category or definition of compliance apparently was recently established. Some Order assessments used the term *deficiency* to describe the status of compliance and listed deficiencies in the RSAD database. Other Order assessments did not use this term. In general, the Y-12 Site Office and MMES personnel were not familiar with either the term or its application.

5. Results of Order Compliance Review. The Order compliance was conducted in two parts: (1) DOE ORO (Y-12 Site Office) and (2) MMES. The following findings were noted:

a. DOE HQ provided the list of Order requirements against which the Site Office and contractor was tasked to conduct the assessment. As stated in paragraph 3.b.viii, not all the requirements of the DOE Order were contained in the RSAD database, and in some cases the database showed the requirements to be non-applicable, or unclear. Many of the requirements classified as non-applicable were applicable, and many required clarification. The Site Office and MMES recognized these inaccuracies, and responded to this mis-classification of 639 non-applicable requirements by proposing that approximately 500 of the requirements be reviewed and redefined for clarification by DOE HQ. This action has not been completed.

b. DOE has employed two prime contractors at the Y-12 Plant - MMES and MK Ferguson. MMES has completed the initial review of Order compliance. No evidence was presented to show that MK Ferguson had started any reviews of any Orders for compliance. This is significant, because MK Ferguson is responsible for new construction and modifications to existing facilities at the Y-12 Plant.

c. With few exceptions, exemptions, CSAs, or STCSs were not used in response to DOE Order non-compliances. In other cases (e.g., DOE Order 5480.5) Compliance Schedule Approval forms were prepared six months ago, but have not been approved. Compensatory measures have neither been established nor used by MMES or the DOE Site Office. The Order implementation plan is the principal means of response by MMES to areas of non-compliance. In some cases, the Order implementation plan contains schedules and compensatory measures. However, this is the exception, and no standard approach was evident during the review.

d. Many Orders had long term Order implementation plans (2 to 3 years or more). For

example, DOE Order 5480.20, *Personnel Selection, Qualification, Training and Staffing Requirements at DOE Reactor and Non-Reactor Facilities* had initial Order implementation plans scheduled for completion in September 1994. This 2½ years is required to develop all the required classroom and on-the-job (OJT) training materials and to conduct the upgraded training as the "continuing training" program for biennial requalification/recertification.

e. MMES did evaluate continued operations for facilities with moderate to high risks in FY 89-90. Short-term corrective actions, such as minor training upgrades or procedure improvements, were completed, but no formal retrievable record of the actions taken exists. Furthermore, no record of long-term corrective actions or compensatory measures implemented to permit continued operations exists.

f. A number of requirements in the Orders were designated as non-applicable (or not assessed).

   i. In the case of the Quality Assurance Order (DOE Order 5700.6C), DOE made the statement that [some of] the Order requirements were "too general to evaluate". This has the effect of negating or removing a DOE Order requirement from the assessment process. Either the personnel do not possess the qualifications to objectively evaluate all requirements, or they failed to exert an adequate effort for the assessment.

   ii. According to Site Office personnel, DOE HQ (DP) instructed the Site Office to forego an assessment of Federal Regulations referenced in the DOE Orders. The justification for this direction was that assessment against these requirements had already been performed by other oversight groups (e.g., Tiger Teams, state/EPA). The result was that approximately half the requirements in DOE Order 5400.3 "Hazardous Waste Management" were declared not applicable. Similarly, a number of requirements in DOE Orders 5400.1 "General Environmental Protection Program" and 5400.4 "CERCLA Requirements" were not evaluated.

g. A thorough review of the implementation of DOE Order 5480.5 was performed. The staff noted that MMES was not in full compliance with approximately 25 criticality protection requirements. This was more than 80 percent of all non-compliances for this Order. The deficiencies were related to lack of comprehensive written plans and procedures, personnel training, geometry control, safety limits and criticality monitors, and on-site movement of fissile material. Compliance Schedule Approval forms were prepared six months ago, but have not been approved for most of these issues.

h. DOE Order 5481.1B requires the systems which support the Environmental Impact Statement or the Environmental Assessment Report to be identified, and their design and performance assumptions monitored to ensure compliance with the requirements. Neither DOE nor MMES complies with this requirement.

i. The process used to assess compliance with DOE Orders 4700.1 "Project Management

System" and 6430.1A "General Design Criteria", brings into question the effectiveness of the review process. A memo from the Field Office to DOE DP Headquarters detailed an agreement with regards to a compliance method which does not require a line by line assessment. As a result, the information presented to the Board's staff reflects neither the requirements of these Orders nor the results of the self-assessment. No objective evidence for compliance with any individual Order requirement could be found. The rationale given to treat these two Orders differently from the others was that "there are literally thousands of requirements stated in these two Orders." A consensus was reached with the Directives Task Force (the predecessor to the Directives Management Group as discussed in paragraph 6.b) that a description of the process used at Oak Ridge for achieving compliance with these Orders would suffice."

j. In the case of one Order, 5480.1B, Environmental, Safety, and Health Program for Department of Energy Operations, compliance with a requirement in the Order was maintained by the Site Office when in fact only one small part of the requirement was met. The remainder of the requirement has not been met, but this "non-compliance" has not been deemed reportable.

6. Implementation of Recommendation 91-1. Recommendation 91-1 is being implemented at the Y-12 Plant. However, based on comments and observations by the DNFSB staff, it is apparent that the importance of routine use of Orders and standards as a way of doing business still has not penetrated to the working level. The Site Office and MMES review of Order compliance was treated as a one time event to satisfy an external requirement, rather than a mission to determine the status of compliance so that the level of implementation and degree of safety achieved could be improved. In general, MMES projected a sense of urgency to identifying, assessing and implementing standards. Conversely, DOE HQ and the Site Office did not have the same degree of urgency concerning implementing Orders important to health and safety.

a. During discussions, one DOE employee stated that "DOE Orders are written as guidance documents."

b. The emphasis of Recommendation 91-1 was on the qualifications of personnel involved in standards identification and implementation. The Site Office has established a Directives Management Group (DMG) to coordinate directives and compliance activities. The DMG ensures that technical personnel from the line and staff perform the reviews of the DOE Orders for adequacy. The DMG consists of twelve personnel - four DOE employees and eight support contractors. These personnel are management analysts and technical writers. These qualifications do not meet the intent of Recommendation 91-1. This issue becomes critical during the evaluation of some Orders. For example, DOE Order 5400.1 General Environmental Protection Program, requires input from regulatory specialists, geologists, hydrologists, meteorologists, experts in effluent modeling, and environmental surveillance (both radiological and non-radiological) and QA specialists. The DMG personnel do not possess the qualifications to resolve potentially conflicting comments in these technical areas.

c. Some orders have been implemented for nearly six months, but are only now being

assessed for adequacy and implementation by MMES. In response to a question asking to explain the long delay time for adequacy assessment and implementation, both the Site Office and MMES personnel stated that DOE HQ required two to three months to reproduce and mail new Orders out to the field following signature by the Secretary of Energy. Headquarters personnel present at the meeting confirmed this statement and added that the line offices in headquarters frequently do not receive new Orders until two or three months after signature by the Secretary.

d. The DOE/MMES contract contains an Appendix E which lists the standards to be imposed on the contractor. The list contains most of the DOE Orders, including the Orders of interest to the DNFSB. It also contains many ORO Field Orders, and some SENs. DOE Site Office personnel stated that the inclusion of ORO Field Office Orders is consistent with the February 1991 Tuck memo concerning Field Office Orders. Site Office personnel stated that the purpose of the memo was to conduct a review at the site level for conflicts, and retain the Orders if the Site Office determined that a conflict did not exist between the HQ Order and the Field Office Order.

e. Based on discussions with Site Office personnel, it was evident that the site has not been given guidance from HQ concerning how they should identify and implement current, new, or revised government orders, regulations, and consensus standards.

7. Draft Order Review Process. During discussions on Monday afternoon, the DNFSB staff inquired about the long delay time between the issuance of an Order and its implementation on the site by MMES. DOE ORO and MMES personnel stated the following:

a. The process of issuing an Order, assessing its adequacy, developing an Order implementation plan, providing for a DOE (Site Office and HQ) review and approval, and scheduling specific milestones for implementation could take as long as one and a half to two years.

b. The review and comment process is performed during the formal comment period of Order development. However, the Draft DOE Orders are not always thoroughly reviewed during the comment period. Site Office personnel stated that HQ often does not provide sufficient time for a thorough review. Specific instances were cited where only a day was allotted for comment on a significant Order.

c. A process to review existing DOE Orders and provide feedback to DOE HQ does not exist. The Site Office offered examples of Orders which should be improved, but stated that the process to improve these Orders was not firmly established. The Order review process is directed at Orders currently in draft.

d. Some Orders are written poorly, and difficult to implement. For example, DOE Orders 5480.21 (USQ), 5480.22 (TSR), and 5480.23 (SAR) have not been assessed for implementation. These orders are in the Implementation Assessment stage by MMES which takes 30 to 90 days for budget and contractual review. It then takes DOE six to nine months to evaluate and approve the MMES proposal before implementing the Order.

Agenda for DNFSB Staff Trip to Y-12 Plant
Implementation of Recommendations 90-2 and 91-1

Monday 1:30 PM June 22, 1992

1. Introductions & Opening Remarks (15 minutes) DNFSB

2. Status of Implementation of Recommendation 90-2 DOE and MMES

   a. Identification of applicable Orders
   b. Assessment methodology for order adequacy
   c. Status of implementation
      i. CSAs
      ii. exemptions.
      iii. other issues

3. Status of Implementation of Recommendation 91-1 DOE and MMES

   a. Organization for developing and implementing directives, orders and standards
   b. Qualification of line and staff personnel responsible for developing and implementing directives, orders and standards
   c. Results of findings from MITRE report applicable to Y-12
   d. Discussion of standards and directives currently under development by DOE and MMES

Tuesday and Wednesday June 23 - June 24, 1992 (7:30 AM - 3:30 PM)

Order and standards review

Name	Order No.	Subject
R. F. Warther	5000.3A	Occurrence Reporting and Processing of Operations Information
	5700.6C	Quality Assurance
	4330.4A	Maintenance Management Program
	1360.2A	Unclassified Computer Security Program
	5500.7B	Vital Records Protection Program
F. Bamdad	5480.5	Safety of Nuclear Facilities
J. D. Roarty	5481.1B	Safety Analysis and Review
	5480.23	Nuclear Safety Analysis Reports
	5480.22	Technical Safety Requirements
	5480.21	Unreviewed Safety Questions
	5480.CRIT	Nuclear Criticality (draft)

Name	Order No.	Subject
D. L. Burnfield	5480.11	Radiation Protection for Occupational Workers
	5482.1B	Environment, Safety, and Health Appraisal Program
	5480.15	DOE Laboratory Accreditation Program for Personnel Dosimetry
	5400.5	Radiation Protection of the Public and the Environment
J. F. Drain (SPC)	5480.20	Personnel Selection, Qualification, Training and Staffing Requirements at DOE Reactor and Non-Reactor Facilities
	5480.18	Training Accreditation
	5480.19	Conduct of Operations Requirements for DOE Facilities
	5480.17	Site Safety Representatives
L. A. Ettlinger	1300.2A	DOE Standards Program
	4700.1	Project Management System
	6430.1A	General Design Criteria
	5480.1B	Environment, Safety and Health Program
	5480.4	Environmental Protection, Safety and Health Protection Standards
M. V. Helfrich	5400.1	General Environmental Protection Program
	5400.3	Hazardous and Radioactive Mixed Waste Program
	5820.2A	Radioactive Waste Management
	5400.4	Comprehensive Environmental Response, Compensation, and Liability Act Requirements
	5440.1D	National Environmental Policy Act Compliance Program
	5400.2A	Environmental Compliance Issue Coordination
W. M. Shields	5480.7	Fire Protection
	5500.1B	Emergency Management System
	5500.3A	Reactor and Non-Reactor Nuclear Facilities Emergency Management Planning, Preparedness and Response Program for DOE Operations
	5500.10	Emergency Readiness Assurance Program
	5500.4	Public Affairs Policy and Planning Requirements for Emergencies
	5500.2B	Emergency Notification, Reporting Requirements

Name	Order No.	Subject
D. Lignon (MITRE)	5484.1	Environmental Protection, Safety and Health Protection Information Reporting Requirements
	5480.3	Safety Requirements for the Packaging and Transportation of Hazardous Materials, Hazardous Substances and Hazardous Wastes
	5483.1A	Occupational Safety and Health Program for DOE Contractor Employees at Government Owned Contractor Operated Facilities
	5480.8	Contractor Occupational Medical Program
	5480.9	Construction Safety and Health Program
	5480.10	Contractor Industrial Hygiene Program