

## **TESTIMONY**

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U.S. Department of Energy  
Before the  
Defense Nuclear Facilities Safety Board

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Mr. Chairman and Members of the Defense Nuclear Facilities Safety Board,

Thank you for this opportunity to provide testimony on the National Nuclear Security Administration (NNSA) Y-12 Site Office's processes for contractor oversight and our role in ensuring the missions assigned to the NNSA are accomplished. I understand that the Board has particular questions on the status of our oversight, our personnel, and our plans for future changes to our oversight model. I am prepared to address these questions for you today.

I have a BS in Nuclear Engineering from North Carolina State University, am registered Professional Engineer, and have 34 years of nuclear operating experience, which began with 6 years as a radiological engineer in the Charleston Naval Shipyard, 24 years at the Savannah River Site which included 3 years in the tritium facilities, and the last 4 years at Y-12.

### **Y-12 SITE OFFICE (YSO) OPERATIONS**

Oversight is more than Safety, and includes Security, Programs, Projects, and Business functions. YSO has the Management systems in place to perform the NNSA's Line Oversight function.

In January 2001, YSO established a Management System Description to provide a comprehensive description of our responsibilities and processes. The initial document defined the conditions in place at that time and defined actions to provide continuous improvement of the YSO processes. It is a living document that is updated frequently to capture the current status and progress toward maintaining and improving Integrated Safety Management System (ISMS) implementation for our office. We conduct a weekly management meeting to address our performance against the system description and direct any changes or actions needed.

The YSO Functions, Responsibilities, and Authorities Manual (FRAM) has been in place since April 2001. This document defines our safety management functions and ensures the responsibilities and authorities for performing those functions are clearly defined. The YSO FRAM captures how ISMS is implemented per DOE Policies 411.1 and 450.4 for federal employees. YSO goals and values are established at a corporate level and documented in the YSO Strategic Plan. This Plan includes individual commitments to a

common set of strategic goals and values that are traceable to the NNSA's commitment to the principles and functions of ISMS.

YSO has Operating Procedures in place to define most of the YSO activities, including contract management and business functions. Additional actions being taken by YSO are the implementation of an electronic database process to track our work efforts so that they can be better managed and focused on areas requiring attention, and efforts to improve our work processes and achieve ISO 9001 status by the end of CY04.

## **YSO CONTRACTOR OVERSIGHT ACTIVITIES**

YSO has an established, effective program for the oversight and assessment of contractor performance. The YSO Assessment Program is essentially a Specification and Requirements Identification Document (S/RID) based program that uses standard assessment practices to assess Contractor performance. The scope of the program includes the following areas of oversight: 1) Base assessments to ensure we meet basic Federal responsibilities for oversight; 2) Reactive assessments which cover responses to issues, events, or poor performance areas; and 3) Site Management and Contract Administration assessments which focus on doing work better within the YSO and the Contractors responsibilities. The program contains three types of assessments: periodic assessments (usually monthly or quarterly), Facility Representative walk-throughs and assessments, and Management walk-around surveillances.

The master assessment plan is used to plan and schedule assessment activities over a three-year period. Areas of oversight based on the Contractor's ISMS program and S/RID requirements are divided into a functional area matrix. For FY04, the functional areas are Quality Assurance; Emergency Management; Radiation Protection; Fire Protection; Criticality Safety; Facility Safety; Occupational Safety and Health; Environmental Protection; Packaging & Transportation; Configuration Management; Training & Qualification; Operations; Maintenance; and Safeguards & Security. Each functional area has elements for which assessments are scheduled to evaluate the Contractor's performance and adherence to S/RID requirements for that particular area. Areas to be assessed (functional areas, facilities, etc.) on a monthly/quarterly basis are identified in an annual assessment plan. When developing the annual plan, assessments are identified and scheduled based on the overall three-year oversight plan and the contractor's performance in the previous fiscal year, with specific emphasis on areas of poor performance or weaknesses. Additionally, assessments are scheduled, as necessary, to address generic issues identified at other facilities in the NNSA nuclear weapons complex or other DOE facilities. Assessment performance against the annual assessment plan is measured by a monthly YSO performance indicator.

Facility Representatives (FRs) conduct walk-throughs and assessments of operations in assigned facilities. Walk-throughs, some scheduled as frequently as weekly, are conducted to identify hazards, incidents of noncompliance with standards and guidelines, and potential problem areas where more thorough inspection is warranted (i.e., pulling the string) and to monitor changes to the facility from construction, maintenance, and

temporary modifications. Assessments include operational performance, quality assurance, management control, and assurance of worker health and safety.

YSO management has emphasized the need for managers and staff to monitor contractor performance through “field time” requirements (i.e. time spent in the Y-12 facilities observing work activities or performing other operational awareness activities). In addition, YSO has established a Management Walk-Around Surveillance program to provide real time operational awareness by scheduling YSO managers to conduct oversight activities in Y-12 facilities. They are accompanied by a FR or other YSO technical staff performing field duties. The intent of this program is to spend field time in the plant actually observing activities and conditions, with a focus on personnel performing operational, production, testing, or maintenance activities, when available. These surveillances ensure YSO management contact with plant issues and provide a strong statement to all levels of the Contractor’s organization of the importance of safe and efficient operations to the customer. These walk-throughs are scheduled quarterly and performed bi-weekly.

YSO assessment results and concerns are documented in a standard report – the Individual Assessment Report (IAR), reviewed monthly by YSO management for trends, and screened to determine those concerns requiring formal contractor response. Weaknesses or deficiencies requiring further Contractor attention are submitted to Contractor management through the YSO Monthly Assessment Report (MAR). The MAR process ensures YSO management oversight, evaluation, and prioritization of the products of the assessment system and provides opportunities for the identification of systemic deficiencies.

YSO’s annual assessment schedules, various assessment and performance feedback reports, and MARs have provided specific results and feedback on Contractor safety performance. Another report, the Performance Analysis Matrix (PAM) provides a “higher level” evaluation of Contractor performance and includes feedback in the Security, Programs, Business, and Management areas. We have just recently completed the second year end report to the contractor under this process. Fundamental elements of this process include:

- Covers the full range of YSO Contractor oversight functions, including business and Security.
- Risk and Performance factors are used to develop a performance rating for each functional area.
- Performance ratings include: Blue – Exceeds Expectations, Green – Meets Expectations, Yellow – Partially Meets Expectations, and Red – Does Not Meet Expectations.
- Cumulative performance ratings for each area are provided in a monthly “stop light” chart.
- Monthly performance trends (up, down, stable) are also provided.
- Each area of the PAM is linked to the Comprehensive incentives from the annual Performance Evaluation Plan (PEP).

- The final end of FY PAM report provides the basis for the annual Performance Evaluation Report.
- The YSO PAM process is intended to be used to “modify” our oversight (down or up) based on changes in risk, importance, or safety performance.

The April 2003 assessment report by the DOE Office of Independent Oversight and Performance Assurance (OA) concluded that “YSO has established an effective assessment program for line oversight of contractor performance.” The report also concluded that YSO mechanisms to communicate information to the contractor were particularly effective. The report further stated “The effective integration and linkage of the contract PEP, S/RIDs, and PAM process, combined with an effective oversight and assessment program (discussed in Appendix D), provide a strong foundation to monitor and hold the contractor accountable for safety performance, in accordance with contract requirements.”

### **YSO SELF-ASSESSMENT PROGRAM**

The YSO performance assurance process measures performance against missions, goals and objectives and provides a feedback mechanism for needed improvements and corrective actions. The performance assurance process consists of four elements: self-assessments; performance indicators; employee appraisal, feedback and recognition; and routine status and performance reviews. The process is intended to assure YSO compliance with line management oversight of ES&H responsibilities as stipulated in DOE P 450.5, Line Environment, Safety and Health oversight. The April 2003 OA assessment report concluded that “YSO has also established the essential elements of an effective self-assessment program for its own activities.” While some issues were raised with the level of documentation of the YSO program elements at the time of the review, YSO implementation of its self-assessment program has continued to improve and most, if not all, mechanisms of this process are now captured in YSO procedures.

YSO has established a comprehensive self-assessment program for our operations. The self-assessment process is adequately defined by procedure, which identifies specific areas to be evaluated once every three years. Schedule compliance is monitored and tracked monthly by the performance indicator program and findings and corrective actions are tracked and monitored. The program evaluates our effectiveness in meeting customer (both internal and external) requirements and expectations, organization goals and objectives, and compliance with DOE/NNSA Orders and policies as reflected in YSO procedures. Areas to be assessed are determined on an annual basis and detailed in a self-assessment schedule that is developed prior to the start of the fiscal year. Assigned assessors conduct the self-assessment, review-governing documents and records, interview staff, observe processes, products and results; and document the assessment process and conclusions. Deficiencies, corrective actions, and areas for improvement are documented and entered into the YSO Deficiency Tracking System (DTS). For FY04 these include but are not limited to: YSO Incidents of Security Concern Program; FEOSH, ISO Certification Internal Audit, Request for Special Work Process, Federal

Technical Capability Panel, Human Reliability Program, ISMS, Safety Basis Review, and the YSO Criticality Safety Program.

Performance indicators (PIs) have been developed to measure and analyze key indices of YSO performance to identify areas needing attention and opportunities for improvement. The PIs are also used to demonstrate improving or deteriorating performance relative to identified goals and objectives. YSO PIs are different and distinct from contractor PIs that are related to actual mission and program execution. The YSO PIs measure the overall effectiveness of the YSO in executing contractor oversight duties including improving contractor performance. PIs improve communication internally among YSO employees, as well as externally between the organization, its customers, and stakeholders. YSO PIs measure progress (planned versus actual performance) against established schedules and criteria for assessment schedules, baseline change control, corrective action tracking system, commitments, customer and diversity contacts, deficiency tracking system, field time, independent/external assessments, lessons learned, occurrence reporting, program direction funding, security, staffing, training and strategic plan goals. PIs are reported and reviewed by management on a monthly basis and discussed with employees periodically. The April 2003 OA assessment report included a description of the YSO PI process as a “noteworthy approach for measuring progress toward strategic plan goals and objectives.”

## **YSO TECHNICAL STAFFING**

The YSO Workforce Analysis and Staffing Plan Report defines the current YSO staffing level, our functional needs, our overall position shortages, and strategies for achieving our staffing goals. The staffing plan also prioritizes the unfilled positions to add appropriate focus to the efforts to fill the open positions. The plan is a living document that is updated annually to reflect the staffing that is needed to effectively carry out the roles, responsibilities, and authorities assigned to the site office with a level of performance that will achieve the NNSA expectations within the YSO management structure. Progress toward recruiting and filling vacancies is tracked in the weekly management system meeting.

Our initial efforts at determining the level of staff necessary to operate the YSO was 96 individuals. After re-evaluating this number against our established and planned processes, we determined that the office could be managed with a staff of 81. Our current position remains the same. However, due to the NNSA re-organization and its' associated personnel policies, we have not been able to achieve the staffing level of 81 that was established for YSO. We are in the process of making selections for some positions, have several other vacancies posted now, and should have the remainder posted soon. These include AB Engineer, Budget Analyst, Contracting Officer, Health Physicist, Industrial Security Specialist, I&C/Electrical Engineer, NCS Intern, NMC&A Engineer, Office Manager, Pro Force Specialist, and RTBF Engineer.

I have placed a strong emphasis on the technical qualification of the YSO staff, including my personal participation as the final approval authority for all YSO personnel

qualifications. Reductions in the technical staff at HQ and the Service Center have increased the reliance on Site Office technical expertise. Some of the technical abilities that were once available in HQ are not being replaced. This makes it even more important to have adequate technical abilities at the Site Office level. YSO has a strong, effective Training and Qualification program in place, as noted in the April 2003 OA report, that includes both initial and continuing qualification. Our program includes a re-qualification requirement for all TQP participants, not just FRs. Currently, 83% of YSO technical personnel are fully qualified and none of the 17% are overdue.

YSO has effective, proven Facility Representative, Authorization Basis Engineer, and Safety System Oversight (SSO) Engineer Programs which are almost fully staffed and qualified. We have 9/9 FRs, all fully qualified; 4/5 AB Engineers – one recently left due to personal reasons (all are fully qualified); and 5/6 SSO Engineers – one new I&C/Electrical Engineer position (to be posted soon) was just recently added as a critical position within YSO (all are fully qualified). The existing AB Engineers have been able to maintain our performance at an acceptable level even with the loss of one individual through additional support from the other technical organizations within YSO and by simply working more hours. The new SSO Engineer position adds a new critical skill to the YSO. The functions of this position are currently carried out by the Lead System Engineer, with support in evaluating issues and events from the FRs and a Project Manager with a background in electrical systems.

#### **LINE OVERSIGHT/CONTRACTOR ASSURANCE SYSTEM (LO/CAS)**

We cannot abdicate our responsibility as the owner of the Y-12 plant. There must always be a base Federal oversight program to enable us to meet Federal responsibilities; however, we must always be evaluating our methods and processes for potential areas of improvement and take actions to promote improvements.

The YSO Management System Description includes three major elements: 1) processes for how we run the site office itself; 2) processes for how we define requirements and accept risk; and 3) processes for conducting oversight, which includes field assessments of the Contractor's performance. In our current operating environment, we estimate approximately 40% of our time on running the office and defining requirements and 60% of our time on assessment of the contractor.

YSO must become more effective and efficient in the way we complete our activities due to: (a) continuing requirements for implementing greater responsibilities at the Site Office level; (b) increasing requirements for Security; (c) existing and upcoming initiatives for Y-12 modernization (new PPTF, HEUMF, administrative facilities, future EU, etc.); and (d) increasing Infrastructure Reduction activities. In order to accomplish current and increasing responsibilities, we have to focus more of our effort on improving the way we run the YSO and providing clearer direction to the Contractor. This will allow both organizations to do a better job of implementing requirements and meeting established milestones.

It is our view that the small staff of YSO technical personnel cannot provide the same level of oversight that can be achieved by leveraging our assessments and required Contractor management and independent assessments. We believe a Contractor Assurance System can help us leverage these assets to improve our oversight. In addition, with full implementation of the CAS process, Contractor oversight can transition from a mostly “tactical” (i.e., transactional oversight activities) to a more “strategic” oversight regime. Performance will then be evaluated using a combination of Contractor performance metrics, independent Federal validation of performance metric reliability, the results of Contractor assessments in all areas, and the results of Federal assessments in higher risk or lower performing areas.

Development of the CAS and Line Oversight approach starts with a common understanding of the requirements and associated risks. Once the requirements and risks are identified, agreement is reached on performance metrics that adequately portray the control of those risks. Information from the Contractor’s efforts to evaluate their performance will be available to YSO through performance metrics and the management and independent assessment programs. The performance metrics will not eliminate Federal assessments; however, they will enable us to reduce our efforts spent in the field gathering data on Contractor performance in low risk areas.

With full CAS implementation, the breakdown of our effort could potentially go to approximately 30% spent running our office, 40% defining requirements and 30% spent on field assessments of Contractor performance. With these savings in YSO effort, we will be able to concentrate our resources on improving our technical capabilities; increasing our attention on Security enhancements, Infrastructure Reduction activities, and modernization projects; on evaluating high risk and/or weak performance areas; on defining clear requirements up-front; and on validating performance in lieu of trying to “assess in” the appropriate interpretation of requirements after-the-fact.

To date, we have not relied upon the contractor’s evaluations to reduce YSO oversight. Any oversight changes that we have made have been the result of our existing processes for evaluating contractor performance. As we see the Contractor’s self-assessment programs maturing and performance metrics are established and verified, we should be able to move to some reliance on the CAS process. Some indications of readiness for the implementation of elements of the CAS process include:

- Contractor organizations that are the most critical of their activities. They should be holding themselves to the highest standards first. Currently, the majority of the organizations across Y-12 are not the most critical of their activities. YSO and independent assessments continue to identify issues and concerns which should have been identified and corrected by a self-critical organization.
- More evidence of the effectiveness of the Contractor assessment activities in fixing the problems, not just identifying them. Currently, the Contractor’s assessment activities are not as effective in correcting problems as YSO or Contractor

management expects, although there was improvement throughout FY 2003 as noted in the PAM evaluation for the Performance Assurance functional area.

- The YSO oversight processes must ensure the Contractor's assessments and performance metrics reflect "true data." YSO's oversight process is fully developed with feedback mechanisms in place, including the PAM, to provide independent measures of Contractor performance. As the performance metrics are developed, the YSO oversight process will have to be reviewed, and possibly revised, to ensure correct mechanisms are in place to validate the adequacy of data reflected in the metrics.

Environmental Protection is probably the area that is the closest to the point where we could consider implementing the CAS process. The organization is routinely working to meet requirements, is self-critical, and continually works to effectively resolve issues. External regulation/fines also enhance performance.

### **COLUMBIA ACCIDENT INVESTIGATION BOARD LESSONS LEARNED**

Y-12 is in the initial phases of developing our actions for this issue. We have formed 3 small teams (3 - 4 members each) made up of both BWXT Y-12 and YSO staff. Each team has been assigned a particular section of the report to evaluate the applicability of lessons to Y-12. Each team will make observations and recommendations that will be presented during a joint BWXT/YSO management workshop. YSO and BWXT management will then develop the list of actions to be implemented for both of our organizations. Our YSO activities are being personally led by the YSO Deputy Manager.

### **YSO CORRECTIVE ACTION PROGRAM**

YSO procedures identify responsibilities and provide a process for identifying and monitoring the correction of performance-based deficiencies in both YSO and contractor activities. When a YSO assessment or self-assessment identifies a concern, it is documented and submitted for review by YSO management at the monthly MAR meeting. Once a concern is determined to be a weakness or deficiency by this process, it is tracked through the YSO deficiency tracking system (DTS). A responsible lead is assigned to ensure an adequate corrective action plan is prepared and executed. The resultant corrective action plan is also entered into DTS and tracked to closure. The DTS includes actions for the review, concurrence, and approval of corrective action plans (CAPs), validation of contractor Issue Response Reports (IRRs), and verification of Requests for Closure (RFCs).

### **SUMMARY**

The actions taken by YSO in implementing Integrated Safety Management which include putting a technically qualified staff in place with well defined roles and responsibilities in a FRAM while implementing a detailed set of contractor oversight performance measures coupled with an experienced and competent Facility Representative program have given us a strong foundation to move forward with NNSA's reorganization and Contractor



Assurance initiatives. While I am committed to the success of the Contractor Assurance initiative, I anticipate little change in our current oversight role until the contractor demonstrates a proven capability to critically evaluate performance and address compliance issues. With the further refinement of budgetary process authority between YSO and NNSA to ensure YSO can fully function as the risk acceptance authority for the Y-12 National Security Complex, I am confident that YSO can fulfill its new responsibilities."