DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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October 10, 2001

The Honorable Francis S. Blake
Deputy Secretary of Energy
1000 Independence Avenue, SW
Washington, DC 20585-1000

Dear Mr. Blake:

According to various reports produced during the past several years, including the recent July 2001 audit report of the Department of Energy's (DOE) Inspector General, *Recruitment and Retention of Scientific and Technical Personnel*, DOE needs to take aggressive action to recruit and retain sufficient critical scientific and technical staff to meet identified mission requirements. Since its inception, the Defense Nuclear Facilities Safety Board (Board) has emphasized to DOE the need to improve its technical workforce. In 1993, the Board issued Recommendation 93-3, *Improving DOE Technical Capability in Defense Nuclear Facilities*. This recommendation resulted in DOE's establishing the Federal Technical Capability Panel (FTCP) and developing two noteworthy standards: DOE M 426.1-1, *Federal Technical Capability Manual*, and DOE G 426.1-1, *Recruiting, Hiring, and Retaining High Quality Technical Staff: A Manager's Guide to Administrative Flexibilities*. These standards provide techniques and processes for improving the recruitment, retention, training, and qualification of high-quality personnel.

The Board's staff recently conducted a review of the Federal technical staffing and qualification programs at DOE's Albuquerque Operations Office (ALO) and two of its area offices—the Kirtland Area Office (KAO) and the Los Alamos Area Office (LAAO). The staff found that each area office had developed its own process for determining annual staffing requirements. ALO had provided no documented guidance on how to analyze staffing requirements and assess needs. As a result, it was not possible to compare and prioritize resource requirements on the basis of a common premise.

A standardized approach to technical workforce analysis that is thorough, rigorous, objective, and applicable to all ALO organizations should serve to identify the technical skill set and workforce required to meet DOE's current and future mission requirements and associated safety functions. In reality, the annual staffing allocations for ALO and its area offices are determined through a series of resource allocation meetings that are arbitrated by ALO. Based on the annual site budgets and the number of contractors at each site, it appears that both LAAO and KAO may not be adequately staffed to handle their mission requirements and safety management functions. Additionally, it does not appear that DOE management is fully

committed to hiring the highly qualified technical personnel required to perform vital safety management functions and meet mission requirements.

Overall, the Technical Qualification Program (TQP) continues to languish at ALO and its area offices. Facility Representatives were the only positions for which substantial progress on qualifications has been made. For example, of the 254 personnel in the TQP at ALO, only 90 (35 percent) are qualified. Of the 164 unqualified personnel, 31 have exceeded the 18-month qualification period. The poor performance of the TQP was identified as a significant weakness in both the ALO Self-Assessment and the DOE Independent Assessment of April 2000. While acknowledging the success of the Facility Representative Program and its supporting qualification program, DOE line management does not appear to perceive the benefit of a similar effort in other areas. Some DOE managers suggested that the poor performance on qualification was attributable to the TQP's not having been made a priority by DOE senior management. This situation and the attitude toward the program are particularly distressing and merit your fullest attention.

The enclosed report on these issues prepared by the Board's staff is forwarded for your information and use as appropriate.

Sincerely,

John T. Conway
Chairman

c: General John A. Gordon
Mr. Rick E. Glass
Mr. Mark B. Whitaker, Jr.

Enclosure

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

Staff Issue Report

September 4, 2001

MEMORANDUM FOR: J. K. Fortenberry, Technical Director

COPIES: Board Members

FROM: J. DeLoach

SUBJECT: Review of Workforce Analyses, Technical Qualification Program, and Facility Representative Training at Albuquerque Operations Office, Kirtland Area Office, and Los Alamos Area Office

This report documents observations made by the staff of the Defense Nuclear Facilities Safety Board (Board) during a review of technical capability at the Department of Energy's (DOE) Albuquerque Operations Office (ALO), Kirtland Area Office (KAO), and Los Alamos Area Office (LAAO). The review focused on workforce analyses and staffing, recruiting and retention, the Technical Qualification Program (TQP), subject matter experts for vital safety systems, and Facility Representative training.

Workforce Analyses. One of DOE's responses to the Board's Recommendation 93-3, *Improving DOE Technical Capability in Defense Nuclear Facilities*, was to establish the Federal Technical Capability Panel (FTCP). The efforts of the FTCP to improve the Federal workforce's technical capability resulted in the development of several standards. One such standard, the *Federal Technical Capability Manual* (DOE M 426.1-1), requires each organization to conduct an annual technical workforce analysis. Another standard, *Recruiting, Hiring, and Retaining High Quality Technical Staff: A Manager's Guide to Administrative Flexibilities* (DOE G 426.1-1), provides techniques and processes for improving the recruiting and retention of high-quality personnel. The staff's review of workforce analyses was conducted with the assistance of management and human resources personnel from ALO and various senior managers from KAO and LAAO.

The annual staffing allocation for ALO and its area offices, from which technical staff requirements are derived, is determined through a series of resource allocation meetings that are arbitrated by ALO. ALO provides no documented guidance beforehand to its offices on how to analyze staffing requirements and assess needs, especially for technical staffing. As a result, KAO and LAAO have different processes for determining technical staffing requirements, making it difficult to compare, prioritize, and compete for limited staffing resources. At the same time, although these processes differ, they appear on the surface to be systematic and to take into account known changes in mission and activity level. The results of the KAO and LAAO workforce analyses are used to justify changes in technical staffing. Requests for staffing changes are considered during the resource allocation meetings with ALO. A thorough and

rigorous technical workforce analysis should serve to identify the technical skill set and workforce required to meet current and future mission requirements and associated safety functions.

Both KAO and LAAO have unmet technical staffing requirements, and fulfillment of these needs has progressed slowly. The KAO staff was recently authorized to increase from 54 to 66, with 55 personnel currently being on board. The LAAO staff has been authorized to increase to 92, with 69 personnel now on board. LAAO presently has fewer technical staff members than needed to handle its responsibilities in a fully effective manner. For example, workforce analyses show that the technical staff required by LAAO includes 17 facility representatives, as many as 15 technical representatives (health and safety subject matter experts), and about 10 safety authorization basis personnel. While LAAO has been successful in increasing the number of Facility Representatives from 8 in September 2000 to 15 currently, attrition remains high. In addition, only 2 technical representatives and 5 authorization basis personnel are on the Federal staff.

The Board's staff obtained from the ALO staff data of an administrative nature (e.g., number of personnel, number of facilities, total budget) in an effort to understand the relative workload and staffing distribution across the various area offices. A table of these data is attached. While it is evident that efforts are under way to move more technical personnel into the area offices, actual progress has been slow. Senior ALO managers indicated that in some cases, the growth of an area office has been constrained by its ability to manage such growth. There was no indication that any action was being taken to correct this situation. Based on the annual site budgets and number of site contractors, both LAAO and KAO may not be adequately staffed to handle their mission requirements and safety management functions.

Recruiting and Retention. LAAO appeared to be the focus of most of the retention efforts being undertaken. Turnover has been high at LAAO during the last several years. For example, LAAO had 13 technical representatives in 1996 and today has 2. Since December 2000, 3 Facility Representatives have left. The main causes of the high turnover have been identified as the high cost of living, remoteness, salary competition with the laboratory, and housing shortages.

In an attempt to counter retention problems stemming from the area's high cost of living and housing, a 10 percent retention bonus for all technical personnel was approved by ALO. Past attempts to use a combination of excepted service and higher pay within pay bands have not yet been successful because of the prolonged and involved process for obtaining DOE-Headquarters approval for Pay Band 4 and 5 positions. In August 2000, DOE-Headquarters delegated to the field offices limited authority to fill excepted service positions at the Pay Band 4 level up to the equivalent of Senior Executive Service Level 1. To date, however, LAAO still has not hired any technical personnel using this limited excepted service authority. Additionally, difficulties in implementing the requirements of the hiring process have delayed filling the position of Senior Safety Advisor, a Pay Band 5 position that has been open since late 1999. The position is not expected to be filled until the end of the fiscal year. Thus, it does not appear that DOE management is committed to hiring high-caliber technical personnel to perform vital safety management functions and to meet mission requirements.

Technical Qualification Program. With the exception of qualification efforts associated with Facility Representative positions, the TQP continues to languish. For example, of the 254 personnel in the TQP at ALO, only 90 (35 percent) are qualified. Of the 164 unqualified personnel, 31 have exceeded the 18-month qualification period. Poor performance of the TQP was identified as a significant weakness in both the ALO Self-Assessment and the DOE Independent Assessment of April 2000.

There are several causes for the poor performance of the TQP. First and most important, the TQP is not supported fully by DOE line management. While acknowledging the success of the Facility Representative program and its supporting qualification program, interviewed Senior DOE managers saw little benefit in a similar effort with the TQP. Some DOE managers suggested to the Board's staff that the poor qualification performance was attributable to the TQP's not having been made a priority by senior management. Others stated their belief that individuals were being qualified based simply on their length of time in a position. Other reasons cited for the poor progress with qualification included the lack of qualification cards and the fact that progress in this area was not identified as an element of performance. In the course of the discussions, a typical qualification card was reviewed in detail. It was found that in this case, the qualification was a paperwork exercise, with individuals being qualified on the basis of length of time in a particular position and not an examination of their knowledge level.

Subject Matter Experts for Vital Safety Systems. The staff investigated the means by which Commitment 17 (establishment of Federal subject matter experts) of the Board's Recommendation 2000-2, *Configuration Management—Vital Safety Systems*, will be fulfilled. A large number of facilities are currently revising and upgrading their documented safety analyses in response to rule 10 CFR 830, *Nuclear Safety Management.* In some cases, existing systems will be designated as safety-significant or even safety-class. These vital safety systems need to be evaluated by both contractor system engineers and Federal subject matter experts to ensure that they will function as intended in the documented safety analyses. The number of such systems may be significant, and DOE may be underestimating the cadre of Federal subject matter experts needed to review such systems.

Although there were no specific plans in place at the time of the staff's review, it appeared that serious consideration was being given to making the Facility Representatives the assigned subject matter experts for their respective facilities. ALO's philosophy is to use Facility Representatives unless modifications are needed to the systems in question, or a particular Facility Representative believes that maintaining his/her responsibilities for operational oversight would be impacted. In the case of modifications, as well as new systems, subject matter experts would be assigned responsibility. Should a Facility Representative believe his/her operational responsibilities would be impacted, an additional Facility Representative would be assigned to the facility. One reason given for this approach is the lack of sufficient technical personnel to assign as subject matter experts. The Board has commented to DOE that using Facility Representatives in this manner may not be prudent.

Facility Representative Training. The Board's staff observed 2 classes on occupational safety for Facility Representatives. The classes were attended by 42 personnel from various government organizations, including 20 Facility Representatives. They were conducted professionally, appeared to be well received, and had good participation. This effort appears to be in keeping with the priority given to qualification and training of Facility Representatives, which have been reasonably successful.

Attachment

Attachment

ADMINISTRATIVE PROFILE OF ALBUQUERQUE OPERATIONS OFFICE AND AREA OFFICES (LAAO, KAO, KCAO, AAO) as of JUNE 5, 2001

DOE Office	Federal Employees (auth./on board)	Technical Employees (on board)	Number of Facility Representatives (auth./on board)	Site Contractor Budget ($)	M&O Contractor and Subcontractor Employment Levels			Number of Facilities	Number of Nuclear Facilities (Cat. 2/Cat. 3)	Number of Moderate/Low-Hazardous Facilities
					Prime	Subcontractor	Total			
ALO	1110/965 [1]	196	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LAAO	92/69	45	17/15	1.79B [2]	6,982	3,148	10,130	~2400	13/5	>350
KAO	66/55	37	10/9	1.5B	7,451	3,349	10,800	~823	12/4	27/350
KCAO	56/48	32	3/3	371M	3,039	146	3,185	~60	0/0	1/38
AAO	91/79	59	11/9	289M	3,975	213	4,188	~450	87/1	100/50
Total	1245/1196	369	41/36	3.95B	21,447	6656	28,303	~3,733	103/16	>916

[1] ALO includes 314 personnel in the Office of Transportation Safeguards (joint DOE/Department of Defense couriers).
[2] The normal annual site budget is $1.2 billion; $1.79 billion for fiscal year 2001 includes a plus-up for recovery from the Cerro Grande fire.

Key

AAO = Amarillo Area Office
ALO = Albuquerque Operations Office
auth. = authorized
Cat. = Category
KAO = Kirtland Area Office
KCAO = Kansas City Area Office
LAAO = Los Alamos Area Office
M&O = Maintenance and Operations