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Before the
Defense Nuclear Facilities Safety Board

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Thank you Mr. Chairman for this opportunity to provide some thoughts for the consideration of the Defense Nuclear Facilities Safety Board (Board) as you review the status of DOE, including NNSA, oversight and management of contracts and contractors. As noted in the notice of this series of public meetings, the Board "will focus on what impacts, if any, DOE's new initiatives may have or might have had upon assuring adequate protection of the health and safety of the public and workers at DOE's defense nuclear facilities." My experience includes 30 years in the Navy nuclear program and over 12 years within the DOE and NNSA complex associated with operations, oversight, and management of nuclear activities. The observations and conclusions in this presentation are based on that experienced coupled with my evaluation of the ongoing efforts to reorganize NNSA and change the DOE/NNSA oversight model.

My discussions in this presentation will focus primarily on the nuclear activities and the risks from those nuclear activities. I believe this is an important focus for several reasons. First, this is the Defense **Nuclear** Facilities Safety Board that has a primary focus on safety of nuclear facilities and activities. Secondly, I believe that the nuclear activities present the potential for the most severe consequences to the public and the workers, as well as the environment, at DOE defense nuclear facilities should a significant accident occur. Thirdly, I believe that if we lose focus on the severe consequences of the nuclear accident, we become complacent and look to historical statistics concerning industrial/construction type accidents as a basis for reduced regulation and vigilance. I believe that this phenomenon is one of the critical lessons and conclusions from the Columbia accident investigation. The ongoing and proposed DOE/NNSA oversight models seem to be justified, in part by the record of past performance without consideration of the processes that defined that performance or the minimum controls to ensure continuation of the record of zero significant nuclear accidents. I believe it is reckless in the extreme to depend on OSHA statistics to justify reduction of the defense-in-depth safety management systems and programs that provide the appropriate assurance that a nuclear accident with unacceptable consequences will not occur.

As I considered the question of the adequacy of oversight, I realized that I can not evaluate the adequacy of the oversight without a better understanding of the purpose for the oversight and the credit in the overall management and regulatory strategy ascribed to the oversight. Prior to evaluation of the oversight, the entire regulatory model of which the oversight is one part must be understood. During the initial public meeting of this series, Mr. Jim McConnell, the Deputy Technical Director for the Board, described the three separate and possibly conflicting responsibilities assigned to DOE/NNSA. These responsibilities are as a customer for the products, including research and remediation

developed by the contractors; the landlord of the facilities in which the contractors create the products; and as the sole regulator of nuclear activities. As Mr. McConnell discussed, the goals of the customer or program side of DOE/NNSA may be in conflict with the regulatory responsibilities. DOE/NNSA is unique in that the Atomic Energy Act assigns to it the responsibility to manage the development of the nuclear weapons products and infrastructure as well as regulate the nuclear activities. As you know, for the civilian sector, the NRC was established to avoid the conflict that exists within DOE/NNSA.

Much of the effort of the Board in the 12 years I have been associated with DOE/NNSA has focused on various aspects of these regulatory responsibilities. Some elements of the regulatory model have been developed. Various initiatives have evolved, been criticized, modified, and disappeared in the name of streamlining, graded approach, necessary and sufficient, etc. However, despite the emphasis by the Board and many within DOE/NNSA, I do not believe that a clear, holistic model to accomplish the regulation of nuclear facilities and activities within DOE/NNSA has been defined and sustained. Without such a model, it is not possible to judge the adequacy of any individual part or initiative.

The regulatory model must have three elements—requirements, implementation, and enforcement.

REQUIREMENTS: The requirements for control of the hazards of the nuclear activities are now adequately defined. In general they are included in the contracts or are laws that all DOE/NNSA contractors must meet. The foundations for the requirements are within the Nuclear Safety Rule, 10 CFR 830 and the Radiation Protection Rule, 10 CFR 835. The Nuclear Safety Rule specifies requirements for Quality Assurance Programs, Documented Safety Analyses (DSA), and Safety Management Programs. Other DOE/NNSA orders and contract requirements specify the attributes for the Safety Management Programs. The Board has been actively involved in assuring the adequacy of the requirements, starting with Recommendation 90-2.

IMPLEMENTATION: Implementation is the action to develop programs and processes through which the requirements will be met, followed by the deliberate execution of the processes and programs to achieve the results specified in the requirements. The record across the DOE/NNSA complex of implementation of the regulatory requirements is not as clear, consistent, or persuasive as the record on definition of the requirements. A number of initiatives have supported implementation. Operational Readiness Reviews verify the satisfactory implementation of the DSA and Safety Management Programs when an activity is being started or restarted. The Integrated Safety Management System (ISMS) initiative, including verification of the implementation of the System, provided a baseline status of implementation of the safety management programs as well as many worker safety initiatives. The ISMS initiative provided a comprehensive regulatory framework. It might even be argued that the ISMS initiative does define a regulatory model. However, the effectiveness of the ISM System is not being consistently monitored nor have consistent expectations been enforced. In the current draft oversight policy, expectations associated with a robust ISMS are barely mentioned. The

implementation of subpart B of the nuclear safety rule provides another opportunity to achieve and verify implementation. The development, review and approval, and implementation of the required DSAs has occurred with significant variations across the DOE/NNSA Complex. In some cases the review of the submitted, rule-compliant, DSA prior to approval is thorough and adequate. In other cases, less effort with less competence is applied to the review. In some cases, there is a formal process to verify the adequacy of the implementation of the approved DSA. At some sites, the contractor accomplishes the verification. At other sites, DOE/NNSA verifies adequacy of the implementation. However, in some cases, neither DOE/NNSA nor the contractor has a formal process to ensure accurate and complete implementation of the DSA. This lack of consistency indicates that there is not a clear regulatory model being followed by DOE/NNSA. More importantly, my observation is that in some cases, the implementation does not achieve the expectations of the requirements and there is no systematic process to detect the inadequate implementation. In those cases, the level of risk exceeds that which DOE/NNSA, as the regulator, has accepted.

ENFORCEMENT: Enforcement is the critical third leg of an adequate regulatory model. DOE/NNSA documentation does not define a comprehensive enforcement model into which oversight is one part. Glenn Podonsky, Director, Office of Independent Oversight and Performance Assurance (OA) testified on October 21, 2003 that his office performed some, but not all, of the functions normally associated with a regulator. He explained what he did not do. He explained what his office did, but not how that fit within a holistic regulatory model. He only acknowledged being a source of information for decision makers, not a regulator and not empowered to enforce. His presentation also noted that the Price-Anderson Amendments Act enforcement office performs some enforcement functions, although how those functions fit into the overall regulatory model was not discussed.

NNSA testimony defended delegation of oversight and regulatory responsibilities to the field without benefit of a basis for why that action was consistent with a comprehensive regulatory model. It was also acknowledged that the processes in the field have not yet been fully defined or implemented. It was further indicated that NNSA Headquarters did not intend to oversee or inspect the adequacy of the field oversight programs or the effectiveness of the implementation of those programs. No compensatory measures were identified to be in place during the transition.

The Under Secretary of Energy focused on worker accident statistics as a measure of the adequacy of the oversight using much the same logic as NASA leading up to the Columbia accident. He also focused on the importance of speed in the clean-up and risk reduction and the detrimental affect of non-value added requirements. In many cases, the non-value added requirements are the defense-in-depth safety management programs that are mandated to ensure the accident with unacceptable consequences does not occur. When regulating high consequence nuclear activities, the only acceptable statistic is zero. His discussion approached an analogy to an argument for speeding on the highway since less time will be spent in the dangerous highway environment.

During testimony from Naval Reactors, it was clear that a complete regulatory model is in place and is effective. I had many years of personal experience in many aspects of this holistic regulatory model and can attest to its effectiveness and completeness. The role, process, and expectations of enforcement and oversight are clear. The Chairman's September 2, 2003 letter to Admiral Bowman further attests to the continuing effectiveness of the Naval Reactors program.

Oversight is clearly an element of the enforcement leg of a regulatory model. However, since DOE/NNSA has not defined a regulatory model, there has not been a clear oversight model. Little effort beyond the vague terms of graded approach or risk based has been given to definition of oversight expectations, criteria, or measurable results. As a result, oversight success is judged through OSHA accident statistics vice the adequacy of the implementation of safety management programs that provide defense in depth for nuclear activities. Little distinction is made between nuclear and non-nuclear activities. The high level expectations of the ISMS Feedback and Improvement function permitted a definition of oversight expectations. However, as can be seen from a review of ISMS Verification reports as well as the OA reports, feedback and improvement expectations or requirements frequently were and are not adequately defined and not effectively implemented. DOE Policy 450.5 concerning Line ES&H Oversight also provided a reasonable set of expectations at a high level but they too were never effectively implemented.

NNSA and DOE have recently promulgated draft policies associated with oversight. The NNSA Policy documentation concerning Line Oversight and Contractor Assurance Systems (LO/CAS) is seriously flawed, although a work in progress. DOE Draft Policy 226.1 and the implementation guidance in DOE Draft Notice 226.1 provide little improvement on the existing requirements specified in ISMS (DOE P 450.4) and Line ES&H Oversight (DOE P 450.5). It does, however, have one significant reduction in that it fails to require any DOE/NNSA Headquarters Line oversight or verification of field performance. What it will accomplish is to further delay maturity of the oversight and assurance systems already in place as well as to codify the current lack of structured Headquarters line oversight of field programs and performance. Since DOE Policy 226.1 is applicable to NNSA, it is not clear that the NNSA LO/CAS effort is necessary or serves any useful purpose towards definition of the oversight element of the overall regulatory model.

The specific elements or attributes defined in the draft oversight policies are in general appropriate and if effectively implemented could provide a significant element of the enforcement leg of a holistic regulatory model. The fatal flaw is in the lack of commitment to a process for assurance that the elements and attributes will be met and maintained. The underlying assumption seems to be that DOE/NNSA need only define expectations and that they will be met. Contractors will apply the necessary resources and take the necessary actions to achieve the desired elements without intrusive oversight. DOE/NNSA field elements will do the same. Does this approach fit within an adequate regulatory model for regulation of nuclear activities? I think not.

My experience in 12 years across the DOE/NNSA complex is that the implied assumptions are far from reality. Assessment and oversight activities require resources that take from profits or award fees. Therefore, in general, contractors voluntarily apply minimal resources to assessment and fewer resources to issues management to improve performance. DOE/NNSA personnel hear the message that oversight detracts from the contractor's ability to do more work and is intrusive. Therefore, the pressure on the site offices is to reduce oversight and allow the contractor to perform. The mantra is to tell the contractor what, not how and let him do it. If the risks were minimal and worker safety were regulated by others, that attitude might be appropriate for DOE/NNSA in their role as a customer. However, as the regulator for the high consequence nuclear activities, the assumptions are not appropriate and the strategy fails to meet the intent of the Atomic Energy Act.

In summary, I believe firm conclusions concerning oversight must be made in the context of an overall holistic regulatory model. DOE/NNSA should be expected to have defined the regulatory model within which the oversight component can be judged. Until such time as the regulatory model is defined, the adequacy of oversight must be judged in comparison to other government organizations and industries with similar risks and consequences such as NASA, NRC, or Naval Reactors. When judged against the standards of those examples, DOE/NNSA oversight is not adequate. While the attributes defined in the draft policy may be adequate, the lack of a defined process or expectation to ensure implementation and continued adequacy is a fatal flaw in the nuclear regulatory environment.

Further, I am concerned that in this period of transition, expectations from existing programs and policies such as ISMS (DOE P 450.4) and Line Oversight (DOE P450.5) are not being met and that no compensatory measures are in place. Most NNSA site offices lack procedures, staff, and competence to meet all of the assigned responsibilities. Contractors are allowed to believe that there will be no verification of the adequacy of the assurance programs they implement. EM is encouraging reduction of requirements and "non-value added" processes which defeats the defense-in-depth safety management programs that are important to preventing the high consequence nuclear accidents. The importance of the DNFSB has never been more apparent. Your forceful and timely intervention must reverse this trend. In the near term the DNFSB becomes a critical compensatory measure in the field. The longer-term action should be to force the description of the regulatory model within which DOE/NNSA oversight and Contractor Assurance programs may be judged. The final step is to ensure that the programs to implement the regulatory model are sound and achieve the desired outcome.

I thank you for this opportunity to present my personal observations and conclusions concerning this important subject. Subject to any questions, this concludes my testimony.