DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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PUBLIC MEETING

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WEDNESDAY,
SEPTEMBER 10, 2003

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The meeting was held at 9:00 a.m. in the Public Hearing Room, Suite 300, 625 Indiana Avenue, NW, Washington, D.C., John T. Conway, Chairman, presiding.

PRESENT:

JOHN T. CONWAY, Chairman
A.J. EGGENBERGER, Vice Chairman
JOHN E. MANSFIELD, Member
R. BRUCE MATTHEWS, Member

STAFF PRESENT:

RICHARD A. AZZARO, General Counsel
J. KENT FORTENBERRY, Technical Director
JAMES J. McCONNELL, Deputy Technical Director
KENNETH M. PUSATERI, General Manager

ALSO PRESENT:

CYNTHIA CARPENTER, Nuclear Regulatory Commission
THOMAS H. BECKETT, Naval Reactors
RUSSELL GIBBS, Nuclear Regulatory Commission
EDWIN HACKETT, Nuclear Regulatory Commission
STORM KAUFFMAN, Naval Reactors

ORIGINAL

I-N-D-E-X

P-R-O-C-E-E-D-I-N-G-S

8:56 a.m.

CHAIRMAN CONWAY: On the record. Today's meeting and hearing were publicly noticed in The Federal Register on August 4. The meeting and hearing are held open to the public in accordance with the provisions of the Government in the Sunshine Act. To further the President's Initiatives under Executive Order No. 12862 and to provide timely and accurate information concerning the Board's Public and Worker Health and Safety Mission throughout the Department of Energy [DOE] defense nuclear complex, the Board is recording this proceeding through a verbatim transcript and videotape.

As a part of the Board's E-Government Initiative, the meeting is also being made available over the Internet through video streaming. The transcript, associated documents, public notice, and videotape will be available for viewing in our public reading room on the seventh floor of this building. In addition, an archived copy of the video streaming will be available through our web page for at least 60 days.

Today's meeting is the first in a series during which the Board will examine the DOE's current

and proposed models of safety oversight and management of the contracts and contractors it relies upon to safely accomplish the mission assigned to DOE under the Atomic Energy Act of 1954 as amended. We will focus on DOE's proposed new initiatives and what impact, if any, they may have upon assuring adequate protection of the health and safety of the public and workers at DOE's defense nuclear facilities.

Our purpose here today, and the remainder of hearings in this series, is to bring together information gained by those who have first hand management, investigative, and oversight experience in the high risk enterprises that potentially pose high risks to the public health or safety, including the workers charged with day-to-day operations. Our intention is to provide a forum where relevant information can be presented and assessed so that we may understand and hopefully gain the maximum benefit from hard-earned experience.

We view the presenters that we will hear from as partners in this initiative. It is our hope and belief that through this joint effort, we may gain a clearer view of the optimum safety management tools that DOE can employ as it safeguards the Nation's trust.

As we proceed in these hearings, we believe it is important to our success in this initiative that we state - and that all those attending to this undertaking understand - we are not here to criticize or judge past incidents, the conditions that brought them about, or the manner in which they ultimately were dispositioned. Simply stated, we meet to learn from the past so that we do not repeat errors: that instead, we may discern if past experiences might offer a blueprint to a responsible path forward. Our success or failure will depend upon full and frank discussion.

The subject matter we now discuss requires this, and the national interest and the public trust compel it. So it is in this spirit that I welcome today's presenters, members of the public, members of the press in our audience, and those viewing our proceeding electronically.

In today's meeting, we will receive the testimony from experienced representatives of the Nuclear Regulatory Commission [NRC] and the Office of Naval Reactors [NR] as to their safety oversight models. In accordance with the Board's practice, and as stated in The Federal Register notice, we will welcome comments from interested members of the public

at the conclusion of testimony.

Let me say this. Well, first let me turn to Dr. Eggenberger. Would you like to make any comments?

VICE CHAIRMAN EGGENBERGER: No, I really have nothing to add, except I would like to say that it's very important for us to understand how the various witnesses look at the whole idea of technical management oversight related to safety. That's what we really need to try to learn: the experiences that these people have had and the lessons learned, because at the DOE we have three entities. We have the Headquarters, the field offices, and the contractors.

It's important that the technical management oversight related to safety is understood in the DOE frame of mind. This also goes along with some of the issues that have arisen in some of the initiatives that are being undertaken by the Department. That's all. I just don't want to say anything more. I'm here to learn.

CHAIRMAN CONWAY: Dr. Mansfield.

DR. MANSFIELD: Thank you, Mr. Chairman. I agree with Dr. Eggenberger. This is not, in my view, an investigative hearing into something that went wrong someplace. Rather, we're here to learn.

Specifically, we're here to learn the effects of the institutional culture that has been established within DOE and other organizations as a result of their approach to technical management. I think we have to take this seriously because we've seen events, most recently Columbia, where questions of institutional culture were raised, and issues have to be addressed about whether things like that could be fixed.

John Logsdon, one of the members of the Columbia panel, defined "culture" as what you do when you don't have anything better to go on or any better instructions or something of that nature. That seems to be it. We've seen what defective cultures can do and how they can degrade safety. I, for one, am going to be looking at this series of hearings as a way to see what we can learn about how to improve DOE safety culture. Thank you, Mr. Chairman.

CHAIRMAN CONWAY: Dr. Matthews.

DR. MATTHEWS: Yes. I have a few comments that I would like to basically read. First, I want to thank our colleagues from Naval Reactors and [the] Nuclear Regulatory Commission for taking time to come here and talk to us about your oversight experiences. Our organizations share oversight safety responsibility for hazards in nuclear operations, and

we share a common goal of protecting the health and safety of the public and workers.

One of the fundamental characteristics of a strong safety culture is a willingness to learn. That's really what we're here to do today: to learn from your experiences in overseeing complex nuclear organizations. The Board is interested in your knowledge as others have said because the Department is on a course to modify contracts to improve productivity and change oversight responsibilities, to assure safe operations, and, quite frankly, increase productivity and strengthen oversight are fundamentally good strategies.

But there are some questions that come out of it. Will the changes improve or diminish safety? Will the likelihood of a high consequence catastrophic event that can occur in these complex high hazard operations increase? Will they stay the same? Or will it decrease? Frankly, I don't know what the answers are to those questions, so we'll be looking for those.

I do have some concerns. Let me explain the changes as I understand them just to put it in context. I think they are threefold. Firstly, there are performance-based contracts that are being

designed to provide what appear to be significant financial incentives to the contractors for delivering on schedule and in budget with apparent disincentives for failure to meet performance measures and indicators. Again, you can't argue with contracts that increase productivity. This is always good for the taxpayer.

Secondly, the goal to strengthen DOE line management oversight processes is being done by delegating more authority and responsibility to the field elements to oversee the day-to-day operations of the contractors against those requirements that are in the contract. Thirdly, DOE contractors will be expected to establish comprehensive self-assessment programs to monitor and evaluate all work performed in their contracts. Again critical, rigorous, creditable self-assessment is an important element of good safety. If correctly done, it should decrease safety risks.

In this model, the Office of Independent Oversight will continue to periodically check the effectiveness of the contractors and DOE line management assessment programs. DOE Headquarters will continue to issue safety directives and mission requirements.

So, in summary, I see a triangle for the foundation of self-assessment based on increased contractor self-assessment, increased line management self-assessment close to where the work is being done, and then a smaller section, which is the independent oversight performed out of Headquarters. These changes, in my view, and I come from the contractor side for many years, are (really) part of a decades-old pendulum swing that (really) has attempted to balance safety and productivity. That's really the issue that I see going on.

If you recall in the Cold War era, safety was primarily expert-based: the experts at the laboratories and at the production sites. There were few regulations and very little safety oversight at that time. Productivity in building up the stockpile was extremely high during this period of time. However, I believe, risks were uncomfortably close to the edge. Certainly, environmental insults were considerable during this time.

All that came to a halt at the end of the late `80s, early `90s, primarily because of the end of the Cold War. But oversight during this period was manifested by what I call the "Tiger Team" approach. If you remember (those), it's when very prescriptive

regulations came on the weapons complex from all directions. Oversight was frequent, constant almost, but very disorganized and hard to understand. Contractors had a hard time implementing the changes that were put in place at this time. As a result, productivity plummeted largely because not much was being done. Safety risks decreased, but not because of better safety practices. It was because basically nobody was doing much work during that period of time.

I think DOE and others realized the futility of this rigorous approach, and a common sense method of safety emerged in the mid `90s called "Integrated Safety Management" [ISM], which basically influenced a standards-based, risk mitigation approach to safe work. It really was very well accepted and implemented by contractors. Oversight was still frequent, but it was more focused with a common set of standards. I believe productivity increased, and safety awareness certainly was significantly better from this. In my view, the ISM approach found a nice balance between productivity and safety.

The latest initiative, as I see it, builds on the successes of Integrated Safety Management, but is aimed at giving more of the responsibility and flexibility to the contractors in order to increase

productivity. Again, my concern, and this is personal, is that you may be pushing a little closer to the edge and the possibility of a nuclear accident. That's why we're interested in it. Decisions for balancing productivity versus safety will primarily be in the hands of the contractor, as I understand it. Independent oversight seems to be decreasing by DOE due to risk change during this. I don't know the answers, but information from this meeting and the following meetings should really help us and the DOE to benefit from your experiences. So I'm looking forward to hearing your comments.

CHAIRMAN CONWAY: Thank you. Kent, do you have anything?

MR. FORTENBERRY: No, I don't.

CHAIRMAN CONWAY: All right. Jim McConnell, our Deputy Technical Director. Jim.

MR. McCONNELL: Good morning. My name is Jim McConnell. I am the Deputy Technical Director for the Defense Nuclear Facilities Safety Board. I'm pleased to be providing some opening remarks on behalf of the Board's Staff.

This is the first in a series of public meetings that will focus on how best to provide oversight of hazardous government activities.

Consistent with the Board's enabling legislation, the purpose of this meeting is to assist the Board in evaluating approaches to oversight in use by or under consideration by the DOE. In this context, I'd like to define oversight, at least; as we're going to discuss it today, to include contractor self-assessment, DOE line management assessment of its contractors, and independent assessment.

As we've all already described, this is an important subject from a safety perspective because oversight is the activity that ensures that safety expectations are actually met. Through oversight, DOE and its contractors assure themselves, their work forces, and the public that the hazardous defense nuclear activities are designed, constructed, operated, maintained, and decommissioned in a manner that will ensure safety.

Initially, we'll be hearing from several organizations that have valuable information and experience with various forms and models of oversight. But before we start, it would be useful to put oversight, and particularly DOE oversight, in perspective.

Oversight can be considered as part of a system by which organizations ensure that mission

objectives are being satisfied. I'll describe the system in more detail shortly, but first I will also describe how at DOE the elements of the system change depending on their mission objectives. This is complicated in some parts for the DOE because the Department has several different roles and potentially competing objectives associated with them. This is because the DOE sometimes acts as a customer, sometimes acts as an owner, and sometimes acts as a regulatory agency.

The basic system by which the DOE or any similar Government agency ensures that its contractors clearly understand and achieve the Government's expectations comprises three elements, in my view. The first element is rules, directives, consensus standards, and best practices that communicate requirements and expectations. The second element is a contract that establishes specific details of cost, scope, schedule, performance, and methods of interaction between DOE and its contractors to accomplish specific work. The third element is oversight, which ensures that the expectations established in the regulations and in the contract are actually met.

Through oversight, DOE checks to ensure

that its expectations are understood and are being fulfilled. If they are not, action is taken as prescribed in the regulations or in the contract to address the problem. In this manner, the three elements of the system (requirements, contracts and oversight), work together to determine what DOE will receive from its contractors.

As a government agency, DOE has many mission objectives, as I've already alluded to. These include national security, research and development, remediation of surplus facilities and sites, and from our perspective extremely important, protection of the public, the workers, and the environment.

For much of its work, DOE relies upon contractors to perform its inherently-risky activities in government-owned facilities. Additionally and importantly, DOE establishes and enforces its own nuclear safety requirements, although we all acknowledge there are many requirements on the Department that come from other sources.

This structure that I have just described has many advantages, but it is not without its challenges. For example, DOE has three main roles as I described: customer, owner, and enforcer of requirements. These roles sometimes have competing

demands that must be reconciled for the Department to achieve its overall mission.

As a customer, it is expected that DOE will focus its attention on the deliverables called for in its contracts. In this role, DOE's expectations are intended to define as clearly as possible the goods, services, and results that the Government seeks. In DOE's terminology, this is the "what" that is specified for delivery. DOE's oversight as a customer is focused on ensuring that high quality deliverables are provided as efficiently and effectively as possible. In this role, DOE delegates a significant amount of flexibility to its contractors to determine how to provide those mission deliverables.

DOE also emphasizes its short-term objectives in its role as the owner. In this case, DOE is also responsible for thinking in the longer term about such issues as preserving its core capabilities and maintaining or replacing its capital assets. Another key aspect of the owner role is that DOE maintains ultimate responsibility for the accidents that could occur in its facilities as well as the long-term environmental consequences of its operations. Oversight in this role should focus not

only on "what" is accomplished but "how" it is accomplished, because different approaches to satisfying short-term objectives can have varying impacts on long-term objectives and can pose greater or lesser risks to the public, the workers, and the environment.

DOE must be more self-reliant in this role because the timeframe of activities associated with these types of issues generally exceeds the length of a typical DOE contract. By self-reliant, I mean that DOE maintains a sufficient cadre of technically competent personnel to fulfill these responsibilities because these responsibilities cannot be delegated to the contractor.

In its enforcement role, DOE focuses on the work performed by its contractors and compares it to preestablished expectations for safety, security, financial management, and any other area of concern to the Government. These preestablished expectations are generally set forth in rules or directives. DOE's oversight in this role is aimed at ensuring that performance is consistent with requirements and identifying areas where performance improvement is needed. Enforcement is primarily a Government responsibility. It is important to note that the

safety benefit of enforcement is bounded by the quality of the safety requirements that form the basis of the assessment and by the competence of the people who perform those assessments.

The complex system that I've just described is further complicated by the fact that DOE is currently implementing or is at least planning three simultaneous initiatives that affect this system. Specifically, DOE is changing its method of specifying requirements, changing the focus of its major contracts, and planning to change its oversight methods.

DOE is changing its directive system and its approach to promulgating requirements for its contractors to emphasize "what" is to be accomplished but not necessarily "how" it is to be accomplished. This approach is intended to provide contractors with the flexibility to tailor and streamline their approaches to their work to allow for improved efficiency and effectiveness. This approach has obvious potential advantages, particularly from the perspective of productivity.

However, given the significant inherent safety risks of DOE's mission, there is also potential for drawbacks to relaxing these centrally controlled

safety requirements that have been developed based on the collective experience of the defense nuclear complex over the last 60 years. This is particularly concerning because much of that hard-won experience has refined how best to perform activities, not just what activities to do.

DOE is in the process of changing many of its contracts to specify and reward achievement of ultimate outcomes or results rather than intermediate process outputs. DOE contracts are increasingly specifying endstates, products, or conditions, but are becoming less prescriptive about methods to achieve those required outcomes.

For example, DOE may require a contractor to close a waste tank rather than specify how to treat and dispose of the waste in the tank. This can be a positive step to ensure that DOE's contractors are focused on producing the important results DOE expects. However, this approach can result in unintended consequences if DOE and its contractor personnel perceive that producing results warrants taking greater risks than should be considered acceptable.

DOE is in the early stages of an initiative to revise its oversight model and methods.

The asserted advantages of such a shift are that the government will get its work done more efficiently and just as safely, thus allowing a reduction in government costs and staffing while accelerating completion of its work. These improvements would be welcome. However, there is the potential that the new system will not be as effective as the one it is replacing, which could result in a decrease in safety. This is one of the reasons why the Board is conducting this current series of public hearings and meetings.

Through these meetings, the Board will examine what impact, if any, DOE's new initiatives in oversight and management of contractors may have on protecting the health and safety of the workers, the public, and the environment. Information presented at these meetings should provide the Board and the DOE with insights concerning both positive and negative aspects of various methods of oversight.

This morning, the Board seeks to gain a broad perspective by hearing about the experiences of other organizations that have used different forms of management and oversight. Some organizations have exerted rigorous oversight, while others have relaxed the level of oversight to varying degrees. Our intent is to explore with these organizations what they have

learned as a result of using these various oversight models, particularly with regard to safety performance.

In subsequent public meetings, the Board will explore DOE's management and oversight policies. DOE personnel will be invited to discuss their new approaches to contract reform, contractor self-assessment, and federal oversight.

I'd like to end at this point by suggesting several explicit and practical questions that we may want to explore as we progress through this meeting and the others in the series.

1. Can the government's management and oversight be streamlined without degrading its ability to ensure health and safety?

2. What criteria should be used to judge the adequacy of the federal oversight system?

3. What criteria should be used to judge the adequacy of the contractor self-assessment program?

4. What are the minimum levels of Federal or contractor oversight that should be maintained?

Subject to any questions from the Board, this ends my remarks. Thank you.

CHAIRMAN CONWAY: Thank you. All right.