

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

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Opening Remarks 3
Chairman Conway

Board Member Remarks 6
Board Members

Board Perspective on Oversight 12
Mr. James McConnell

Naval Sea Systems Command Oversight 22
Mr. Thomas Beckett
Mr. Storm Kauffman

Nuclear Regulatory Commission Reactor 63
Nuclear Oversight Process
Ms. Cynthia Carpenter

Lessons Learned from Nuclear Power Industry . . . 102
Dr. Edwin Hackett

Public Comments 137
Mr. Richard Miller

Final Remarks and Recess 146
Chairman Conway

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

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

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

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

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

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

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

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1 at the conclusion of testimony.

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

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

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

21 CHAIRMAN CONWAY: Dr. Mansfield.

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

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

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

18 CHAIRMAN CONWAY: Dr. Matthews.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

15 MR. FORTENBERRY: No, I don't.

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

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

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

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

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

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

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

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

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

25 Through oversight, DOE checks to ensure

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

25 CHAIRMAN CONWAY: Thank you. All right.

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