

UNITED STATES OF AMERICA  
DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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PUBLIC MEETING

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Tuesday,  
January 23, 1996

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625 Indiana Avenue, N.W.  
Washington, D.C.

The Board met in the Public Hearing Room at 9:00  
a.m., John T. Conway, Chairman, presiding.

MEMBERS PRESENT:

MR. JOHN T. CONWAY, CHAIRMAN

DR. A.J. EGGENBERGER, VICE CHAIRMAN

CAPT. JOHN W. CRAWFORD, USN (RET), MEMBER

MR. JOSEPH J. DiNUNNO, MEMBER

STAFF PRESENT:

Robert Andersen, General Counsel  
George Cunningham, Technical Director  
Kenneth Pusateri, General Manager  
Timothy J. Dwyer  
Steve L. Krahn

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P R O C E E D I N G S

9:00 a.m.

CHAIRMAN CONWAY: Good morning, ladies and gentlemen. We're about to begin. The clock says 9 a.m. and we hope to be on time.

This is a public meeting of the Defense Nuclear Facilities Safety Board and Members of the Board are here. For the record, my name is Conway, John T. Conway, Chairman. To my immediate left is Dr. A.J. Eggenberger, the Vice Chairman of the Board. To my right is Captain Jack Crawford. And to Dr. Eggenberger's left is Joseph DiNunno. We are four Members of the Board. Our fifth Member is on travel status today, but we four constitute the Board for this meeting.

General Counsel, Andy Andersen is at the table and Ken Pusateri, our General Manager is here. Also is our Technical Director, Dr. Woody Cunningham. And as we proceed with the meeting this morning, as we speak, particularly the witnesses before us, who will be Members of our technical staff will identify themselves for the record as they speak.

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1                   This meeting was noticed in the Federal  
2 Register and at this point I will put in the record  
3 the notice that was in the Federal Register. The  
4 Board is acting pursuant to its enabling statute and  
5 we will be considering today Recommendation 93-3. I  
6 will also at this point in the record put in the  
7 specific recommendation which is the subject of our  
8 meeting today and accompanying that in the record will  
9 be the Implementation Plan that has been agreed to  
10 between the DOE, Department of Energy and this Board.

11                   This is similar to the public meeting and  
12 public hearing we held on Standards in which we had  
13 members of our staff review for the Board in a public  
14 meeting details of what they have found and subsequent  
15 to that we will invite representatives from the  
16 Department of Energy. This record will be made  
17 available, obviously, to the Department of Energy, as  
18 well as to the public. And with that, I will turn to  
19 other Members of the Board to see if they wish to add  
20 anything to my statement. There's an indication "no".  
21 Therefore, I now turn to Dr. Cunningham, our Technical  
22 Director.

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1 DR. CUNNINGHAM: Thank you, Mr. Chairman.  
2 We're prepared to proceed with the hearing. Before we  
3 bring on the testimony of the Technical Staff, I'd  
4 like to turn over the meeting to Mr. Andersen, our  
5 General Counsel, for the background information.

6 CHAIRMAN CONWAY: Fine.

7 MR. ANDERSEN: Thank you, Mr. Chairman,  
8 and Dr. Cunningham.

9 Mr. Chairman, I would request, I have a  
10 fairly lengthy written statement that I'd like to make  
11 a part of the record. I think it's important that we  
12 have a solid, written record in this case, but I just  
13 intend to summarize it as you did with the Notice, if  
14 that would be acceptable.

15 CHAIRMAN CONWAY: Fine. We'll accept your  
16 prepared statement in its entirety for the record.

17 MR. ANDERSEN: Okay, I'd like to point out  
18 that what I'll be saying at times will be my opinion,  
19 but in most instances, I'll say practically all the  
20 conclusions that I'm going to be highlighting are  
21 contained in the Board's Annual Reports for the last  
22 five years. So the Board has been involved in this

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1 issue for quite some time and has expressed its  
2 opinion and I don't think I've deviated from what's  
3 already in the record.

4 With that, I'd like to talk just briefly  
5 about both the statutory basis for and the history of  
6 the Board's involvement in this issue since 1990. The  
7 lack of a sufficient number of technically qualified  
8 program and oversight officials underlies many, if not  
9 all, of the health and safety problems that we've  
10 identified at Defense Nuclear Facilities. Congress  
11 recognized this and in its report accompanying our  
12 enabling statute, stated that the Board is expected to  
13 raise the technical expertise of the Department  
14 substantially and to assist and to monitor the  
15 continuing development of DOE's internal ES&H  
16 organization and to provide its independent safety  
17 oversight to the Secretary and in some cases to the  
18 President. Congress expected the Board to raise the  
19 levels of critical expertise, technical vigor and a  
20 sense of vigilance in the Department at all levels.

21 When we take a look at the Board's  
22 enabling statute, we find that it mandates the Board

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1 to address technical competence when it underlies such  
2 matters as review under the content and implementation  
3 of safety standards bi-yearly, when it admonishes the  
4 Board to investigate events and practices which can  
5 adversely affect safety and health at the sites.  
6 Obviously, personnel and direction given to contractor  
7 personnel at the sites underlies many of the practices  
8 and standard problems that we've identified to date  
9 and the Board's identified to date.

10 If the Board does identify there's a  
11 problem, it must make recommendations it deems  
12 necessary to adequately protect public health and  
13 safety.

14 The importance of qualified DOE technical  
15 expertise is a matter of a well-documented and long-  
16 standing belief by many who have looked into this  
17 field, beginning in the 1970s and 1980s with reports  
18 after Three Mile Island. Both the former and the  
19 present Secretary of Energy have acknowledged before  
20 this Board and in other public forums how important  
21 they believe that technical qualifications are to an  
22 adequate safety and health program.

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1                   However, the problem remains a pervasive  
2 one and deficiencies still exist from staff reviews in  
3 both Headquarters and the field. The most recent  
4 circumstance under which this has been visible and  
5 patently obvious to the staff in any event is in the  
6 situation where we've worked with DOE to review safety  
7 standards, orders and rules and have found that the  
8 level of technical expertise is there. It exists at  
9 DOE, but is often not reflected in the decision making  
10 levels and at management levels in that standards  
11 effort.

12                   Contributing causes have been identified  
13 by the Board and I won't go over them today except to  
14 briefly summarize them. The Board has noted that the  
15 limited capability of DOE to attract technically  
16 competent professional engineers and scientists in  
17 nuclear weapons activities and assignments as career  
18 choices remains a problem. The failure of DOE to  
19 effectively use the excepted appointment authority and  
20 hiring has been a problem. The lack of an aggressive  
21 recruitment and retention policy for technical career  
22 individuals remains a problem. Insufficient attention

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1 by internal monitoring elements of DOE to this problem  
2 as a contributor to off normal or safety problems  
3 remains a problem and the lack of an effective program  
4 for interchange of technical staff between  
5 Headquarters and the field is an underlying cause.

6 The Board has recognized in its statements  
7 in the Annual Reports that it's much easier to  
8 identify these problems than it is to correct them.  
9 I'll talk about at least, in general, what we think  
10 are some of the problems in correcting these problems.

11 Now a brief history of Board involvement  
12 in enhancing DOE technical capabilities and response  
13 to its statutory obligations.

14 The Board's very first recommendation, 90-  
15 1, issued in February 1990 called for the development  
16 of an effective training program in the K-Reactor  
17 facilities at Savannah River. That was a successful  
18 recommendation. It was implemented effectively.  
19 However, the principles underlying that which have  
20 been used effectively at the Replacement Tritium  
21 Facility were not followed up either at Savannah River  
22 or more broadly throughout the defense complex. This

1 led to a number of staff reviews at the Oak Ridge Y-12  
2 plant, Rocky Flats, Pantex and other places within the  
3 complex and resulted in the Board's issuance of a  
4 second recommendation, 92-7. In 92-7, the Board  
5 attempted a broader shot at trying to get these  
6 problems resolved complex-wide.

7 The first implementation submitted in  
8 1993, 92-7, was inadequate. In fact, even though an  
9 adequate, or acceptable, plan was subsequently  
10 submitted, DOE did not really correct the deficiencies  
11 in this implementation plan until the initiatives of  
12 92-7 were embraced in an even broader proposal,  
13 Recommendation 93-3, for improvement of the  
14 recruitment, retention, education and training of  
15 DOE's technical personnel.

16 CHAIRMAN CONWAY: That was issued in June  
17 of 1993.

18 MR. ANDERSEN: Correct, Mr. Chairman.  
19 Now, the Board has issued a number of other  
20 recommendations that Tim Dwyer of the Technical Staff  
21 later on will detail for the Board, many of which  
22 touch and concern these technical capability issues,

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1 both within DOE organizations and within DOE  
2 contractors, and I won't go through those now. I'm  
3 going to focus just to give a little bit of background  
4 on 93-3 itself.

5 93-3 asked for four or five things.  
6 First, it wanted the establishment of a policy and a  
7 statement if you will, of Departmental will and  
8 commitment to attract and retain high level scientific  
9 and technical personnel in the safety areas that we  
10 work in. It asked that they seek excepted appointment  
11 authority for hiring and retention of those personnel  
12 and I'll get into that in greater detail later. It  
13 also asked that a technical personnel manager be  
14 appointed at a high level within DOE.

15 CHAIRMAN CONWAY: It said within the  
16 Office of the Secretary, as I recall.

17 MR. ANDERSEN: That's correct, Mr.  
18 Chairman, and it was later decided that that  
19 individual would report to the Assistant Secretary for  
20 Human Resources and Administration by DOE. That was  
21 a determination by DOE. He did not report directly to  
22 the Secretary.

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1 Third, it asked DOE to develop a broad-  
2 based plan of DOE initiatives that, in essence, said  
3 let's use all the tools we have available to us:  
4 training, hiring, even firing nonretentioned, to  
5 upgrade the cadre of technical capability that we have  
6 at the Department.

7 Lastly, it asked for both internal and  
8 external assessments of problems with hiring or  
9 retaining and educating and training the technical  
10 work force and development of a corrective action  
11 plan.

12 Now, this approach, if I could summarize  
13 it, Mr. Chairman, was all right. Other than the paper  
14 exercises that DOE has now completed like the issuance  
15 of policy statements, the actual obtaining of excepted  
16 service, the Board wanted DOE to take a two or three  
17 tier approach. First, we wanted DOE to hire competent  
18 people from the outside to augment the pool of  
19 technical capability and for those people that are  
20 already inside of the Department, we wanted DOE to  
21 determine what the difference between the capability  
22 of the incumbents, the people that are already in

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1 those positions, the difference between what they.  
2 really are required to do in their job and what  
3 they're capable of doing at the present and then  
4 develop a program to upgrade their capabilities  
5 through education, training and other assignments that  
6 would help them to do that.

7 I like the phrase that the Technical  
8 Director used yesterday, Woody Cunningham, when he  
9 said those things have been done, that is, the  
10 paperwork supporting all of those efforts has been  
11 done. If you will, the plumbing has been hooked up.  
12 The problem the technical staff, and we'll get reports  
13 on that later have had in the last couple of years is  
14 the spigots haven't yet been turned. The valve hasn't  
15 been turned. You will see that the amount of hiring  
16 under excepted service has been minimal. You will see  
17 the determination of what we call the delta between  
18 what is required for the job and what is there.  
19 They've been slow to determine that and take action to  
20 correct it and that really is at the heart of 93-3.  
21 These other things had to happen first, but the real  
22 heart of getting that technical capability raised in

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1 that pool is to take that two-step approach and that's  
2 where we're having trouble right now.

3 All right, to address several overlaps in  
4 the elements of 92-7 and 93-3, the Secretary suggested  
5 that 93-3 be the umbrella for all of those types of  
6 activities, personnel safety activities within the  
7 Department. The Board agreed with that and finally a  
8 comprehensive combined implementation plan was  
9 accepted on November 5, 1993.

10 Now, if I could, just for a few minutes  
11 I'd like to focus on excepted appointment authority  
12 and efforts in the hiring area because the technical  
13 staff are going to cover many of the problems that  
14 we've had in implementation plan with other areas.

15 In Recommendation 93-3, we asked the  
16 Department to seek excepted appointment authority from  
17 Congress. Before I get in to any other discussion, to  
18 avoid confusion for members of the public, I should  
19 define what I mean by "excepted appointment authority"  
20 or "excepted appointment service." Simply put,  
21 excepted service appointment, Mr. Chairman, is the  
22 appointment of professional staff to positions within

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1 the Federal Government without regard to Civil Service  
2 laws and restrictions regarding advertisement,  
3 appointment, hiring and pay contained in Title V of  
4 the United States Code.

5 Long ago, it was determined that hiring  
6 and retaining certain professional employees was not  
7 well suited to rigid pay, hiring and classification  
8 requirements that are contained in those laws. The  
9 Federal Government in its wisdom, found it difficult  
10 to recruit individuals such as scientists, medical  
11 doctors, engineers and yes, even lawyers and other  
12 professionals because of the rigidity that was  
13 contained in the Civil Service laws. Therefore, many  
14 of the agencies whose work is dependent on highly  
15 competent, technical and professional talent were  
16 getting excepted appointment authority. Those  
17 agencies included National Aeronautics and Space  
18 Administration, NASA; the National Science Foundation  
19 that Dr. Eggenberger used to work for and I worked  
20 for; the National Institutes of Health, NIH, and many  
21 others. And Congress authorized them to hire, pay and  
22 manage individuals that were professionals without

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1 following the rigid procedures contained in the Civil  
2 Service Act --

3 CHAIRMAN CONWAY: That included the  
4 Nuclear Regulatory Commission?

5 MR. ANDERSEN: Yes sir. I was going to  
6 point out that both the Nuclear Regulatory Commission  
7 which is similar in its intent and the Board have  
8 found that this excepted appointment authority is  
9 absolutely essential to be competitive to quickly get  
10 out into the work force with, and quickly hire  
11 individuals that have technical capabilities.

12 CAPT. CRAWFORD: Could I interrupt for a  
13 moment?

14 MR. ANDERSEN: Sure.

15 CAPT. CRAWFORD: I would like to see if we  
16 should use the word "found." We have indeed found  
17 that to be experience, but don't think the Agency,  
18 this Board, was born with that authority. Our  
19 Chairman, in what I think was one of the most  
20 remarkable accomplishments of the Board early on,  
21 personally made the moves and did the, took the other  
22 actions that were necessary to acquire that authority

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1 early on for this Board. I think we made good use of  
2 it, but we didn't just inherit it. We just -- the  
3 Chairman had to go after it.

4 MR. ANDERSEN: Because the Board had found  
5 excepted service so useful and had applied for and  
6 obtained, through much effort, that authority through  
7 OPM, OMB and Congress, they made it a key part of 93-  
8 3.

9 Although DOE accepted that authority and  
10 said that they would seek it from Congress, it did not  
11 happen overnight, Mr. Chairman, as you may well  
12 recall.

13 CHAIRMAN CONWAY: It also required the  
14 President's signature.

15 MR. ANDERSEN: It also required the  
16 President's signature. It required --

17 MR. DiNUNNO: May I interrupt a moment?  
18 In all of our provisions of excepted service that I  
19 found, that I find the most useful and that is it's  
20 the largest pool of talent that the Department can  
21 draw upon. When you're bound by the Civil Service  
22 regulations, you are restricted, at least in a

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1 priority sense, to a much smaller grouping of people  
2 to which positions can be filled, but with the  
3 excepted service you can go outside the Government  
4 system to look for talent and when you're looking for  
5 the most qualified or highly qualified, it's not only  
6 a pay situation involved, but it's the talent pool  
7 that is large. So to me, the enlargement of the  
8 talent pool is very crucial in this piece of excepted  
9 service provision.

10 MR. ANDERSEN: I agree. And although the  
11 Civil Service, I don't want to say that it won't allow  
12 you to hire outside the Government, it makes it much  
13 more difficult. It makes it difficult to make a  
14 timely offer to an individual who may have several  
15 offers elsewhere and is not yet on an OPM certificate.  
16 It just makes it possible for you to function and I  
17 believe that the other science agencies, as well as  
18 the Board, have found it absolutely critical to their  
19 operation.

20 In spite of acceptance that they would  
21 seek that and in spite of the fact that your staff  
22 provided, Mr. Conway DOE with several alternative sets

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1 of language on how this could be sought from Congress,  
2 it took many months and in fact over a year to  
3 actually get the ball rolling on that. The Chairman,  
4 that is yourself, Mr. Conway met with the Secretary of  
5 Energy, officials of the Congressional Affairs Office  
6 in DOE, the Assistant Secretary for Human Resources.  
7 You testified on every occasion that was presented to  
8 you on how well the Board had used that authority and  
9 how much DOE needed it, and yet, I must be frank, this  
10 may be hurtful to some in the audience, DOE was  
11 reluctant to pursue this. Your staff got involved  
12 with DOE's own staff in selling this approach, even  
13 after it was accepted, to the Office of Management and  
14 Budget, the Office of OPM, Office of Personnel and  
15 Management, and a draft proposal was put together very  
16 similar to what was finally accepted.

17 Now, it finally occurred in 1995 in the  
18 National Defense Authorization Act of 1995, the  
19 Secretary of Energy was given the authority to use  
20 excepted service and it was signed by the President.  
21 It allowed the Secretary of Energy to establish up to  
22 200 technical, scientific and engineering positions

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1 whose duty would relate to safety at Defense Nuclear  
2 facilities and to appoint those people to such  
3 positions without using Civil Service procedures.

4 There were several limitations in place,  
5 but the only substantive one that I want to get into,  
6 because it pertains to some of the difficulties that  
7 DOE has been having with use of the excepted service,  
8 is that it said that rate of pay was not to exceed  
9 level IV of the Executive Schedule. Well, that's the  
10 limit, the same limit that's placed on SES. Nobody  
11 may be paid at a level higher than level IV in the  
12 Executive Schedule, all right? So that's not a very  
13 tough limitation to meet.

14 They did put a two-year termination period  
15 on the use of this excepted service and it's why your  
16 staff is concerned and is bringing this issue to you  
17 today, Mr. Chairman, is because they must use this  
18 authority by September 30, 1997 and at that time it  
19 terminates. And to date, as Mr. Dwyer and others will  
20 point out to you, they've been few people that have  
21 been hired under this authority and certainly nowhere  
22 near the percentage of hires that we would have

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1 expected.

2 Now, one of the things that I believe has  
3 hindered this effort is the interpretation by Mr.  
4 Archer Durham and others, but Mr. Archer Durham, in a  
5 written document of November 1, 1995, '94, stated that  
6 section, 3161 of the Defense Authorization Act "shall  
7 not be used to make appointments to senior Executives  
8 Service type positions." [The distinction between a  
9 senior level scientific or technical position and an  
10 SES position is often vague as senior level appointees  
11 in the excepted service may also be policy advisors  
12 and supervisors.] This directive, in essence,  
13 administratively limited the types of appointments  
14 that DOE managers out in the field and at Headquarters  
15 could make using this excepted service authority.

16 CHAIRMAN CONWAY: Andy, at this point I  
17 think we ought to put in the record the actual  
18 legislative language that was passed in the  
19 authorization, was included in the authorization bill.

20 MR. ANDERSEN: Yes sir. That is a part of  
21 my prepared statement for the record is the actual  
22 statutory language.

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1           Mr. Chairman, I must tell you that that  
2 limitation has no basis in law. It may be an  
3 administrative decision that DOE wants to live with.  
4 You'll recall that we have discussed this with General  
5 Durham, but I see no reason to artificially limit  
6 those appointment authorities. The legislative  
7 history, which is also in my prepared statement, will  
8 bear out that those who wrote the statute intended  
9 that it be used for the kind of management direction  
10 and guidance positions that are essential to safe  
11 operation of DOE's defense nuclear facilities. So I  
12 think DOE has arbitrarily taken a crabbed approach to  
13 this and there are reasons for that.

14           If I might, just for a moment go away from  
15 my prepared statement, I would like to talk about what  
16 I think are really the underlying problems with their  
17 use or nonuse of excepted service. I must say that  
18 the people in the administrative positions at DOE have  
19 a stake in the old systems. They were reluctant to  
20 use something that they hadn't used before. They were  
21 quick to see inconsistencies with it and other  
22 positions. In other words, the status quo had a lot

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1 of sway. We fought hard. We got the authority and  
2 still they were reluctant to put it into place and it  
3 remains today to be a problem. They do not have the  
4 will, I believe, to use it now.

5 Now, one of the explanations for this is  
6 that they are in a tough environment now and they are,  
7 indeed, in a tough environment in that there is  
8 downsizing at the Department of Energy, and yet, your  
9 General Manager, your General Counsel and your  
10 Technical Director have pursued with individuals at  
11 DOE ways of managing, hiring under an excepted service  
12 even in that downsizing environment. For example, at  
13 NSF, we often were in such situations and used what  
14 I'll call 2 for 1 skill mix tradeoffs. That is, if we  
15 lost two people in say an administrative or a clerical  
16 or a contracting office through downsizing, we had a  
17 plan whereby they were allowed to fill that gap with  
18 one in a technical field. Somebody may have been what  
19 we call principal independent, that is capable of  
20 using computer technology such that they did not  
21 utilize the typical amount of secretarial and clerical  
22 help. There are ways to manage around it, if the will

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1 to use it exists.

2 CHAIRMAN CONWAY: Let me ask you on that  
3 point that you believe that within the administrative  
4 areas are sections within DOE, you think there is an  
5 ingrained resistance to change. Prior to the  
6 legislation which gave DOE this excepted service, in  
7 the previous legislation, didn't they have the  
8 capability under legislation to --

9 MR. ANDERSEN: You make an excellent  
10 point, Mr. Chairman. They had -- the excepted service  
11 that they obtained for technical people in the safety  
12 areas of defense nuclear facilities is in addition to  
13 200 excepted service positions that they have had  
14 since 1977.

15 CAPT. CRAWFORD: And not used?

16 MR. ANDERSEN: Never used for a single  
17 hire.

18 CHAIRMAN CONWAY: So in effect, they  
19 really had through previous legislation the capability  
20 of doing this and had not utilized that.

21 MR. ANDERSEN: That is correct.

22 CHAIRMAN CONWAY: Okay.

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1 MR. ANDERSEN: And there are many  
2 political policy and other reasons for that, but the  
3 fact of the matter is if the will is there to upgrade  
4 your technical capability through the use of excepted  
5 service, you can do it, Mr. Chairman. I've seen it  
6 done in two of the other agencies that I've worked  
7 for.

8 CAPT. CRAWFORD: If I could interpose a  
9 remark, you say you have seen it done. I've been  
10 involved in doing it, Mr. Chairman. Some years ago,  
11 when the reactor development program of the AEC was in  
12 a state of malaise, we received a mandate to upgrade  
13 it from the Joint Congressional Committee of which you  
14 were Executive Director, I believe, on the staff at  
15 that time.

16 We took that job on and our principal  
17 impediment were the personnel organizations for a  
18 while. Then Commissioner Ramey, General Manager  
19 Hollingsworth and Assistant General Manager  
20 Vinciguerra, let it be known that it was going to  
21 change and the attitude in the Personnel Department  
22 changed overnight. We got all -- all it takes is will

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1 power generated and developed at the very top echelons  
2 of the Agency. That's what it takes.

3 MR. ANDERSEN: Mr. Chairman, we have that.  
4 We have the commitment of the Secretary. We have the  
5 commitment of Archer Durham. It has not become the  
6 will of the lower level people and the managers and  
7 the middle level managers to actually make it become  
8 a reality. That is a problem and remains a problem  
9 and Mr. Dwyer will deal with the actual statistics and  
10 facts that bear what I say.

11 Finally, rather than be viewed as somebody  
12 who cannot see things in a balanced way, I'd like to  
13 say something about the progress that has been made by  
14 DOE under 93-3. They've made some progress on some  
15 under many, of the other recommendations as well. But  
16 I want to point out the fact that they did obtain this  
17 excepted service that they'll use to the hilt in the  
18 next year. They will upgrade their technical  
19 capability to a great degree. They have appointed an  
20 excellent technical personnel program coordinator, in  
21 my opinion, in the person of Admiral Evans and I think  
22 he's an excellent person to have heading up that

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1 particular issue. They have done some work on  
2 determining what the technical qualification standards  
3 are. Again, Mr. Dwyer will talk to you about the  
4 quality of those. They have started the assessment of  
5 the delta, but they are nowhere near completed and one  
6 would hope they would complete that before they lose  
7 the ability to hire outside, if the result of that  
8 review points out they need to go elsewhere to get the  
9 capability, rather than rely solely on education and  
10 training.

11 With that, I think I'm going to leave the  
12 rest for my actual prepared statement to put into the  
13 record, Mr. Chairman. I'll turn it back over to Mr.  
14 Cunningham, Dr. Cunningham, unless there's any  
15 questions for the Board that you might have.

16 CHAIRMAN CONWAY: Woody?

17 DR. CUNNINGHAM: Mr. Chairman, at this  
18 time I'd like to call on Mr. Timothy Dwyer to discuss  
19 recent DOE personnel activities.

20 Mr. Dwyer?

21 MR. DWYER: Thank you, Dr. Cunningham.  
22 Good morning, Mr. Chairman, Mr. Vice Chairman, Members

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1 of the Board, Dr. Cunningham, Mr. Andersen, Mr.  
2 Pusateri. My name is Timothy Dwyer. I'm currently a  
3 member of the Standards Group of the Board's Technical  
4 Staff and the purpose of my testimony today is to  
5 provide a summary and an evaluation of the actions  
6 taken over the last two years by the Department of  
7 Energy to raise technical expertise within selected  
8 programs in the defense nuclear complex.

9 As noted by Mr. Andersen in his  
10 presentation, the Senate Conference Report that  
11 accompanied the Board's enabling legislation provided  
12 specific objectives regarding technical expertise in  
13 DOE. In acting in its responsibilities to meet these  
14 objectives, the Board has commented on the adequacy of  
15 DOE technical expertise in each of the Annual Reports  
16 provided to Congress. In fact, the latest Annual  
17 Report published in February of 1995, states and I'll  
18 quote here, "in each of its first four Annual Reports,  
19 the Board recognized the most important and far-  
20 reaching problem affecting the safety of DOE defense  
21 nuclear facilities is the difficulty in attracting and  
22 retaining personnel who are technically qualified to

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1 provide the management, direction and guidance  
2 essential for safe operation of DOE defense nuclear  
3 facilities. It remains the most critical problem  
4 today."

5 The Board's calendar year 1995 Annual  
6 Report is currently being drafted. We have, at this  
7 time, no reason to expect any change in the commentary  
8 we will offer. As will be shown in this testimony,  
9 little to no improvement has been noted.

10 In very basic terms, solving any problem,  
11 or a problem of this sort, must involve two things.  
12 You have to identify the problem and then you must  
13 make use of your available tools to solve the problem.  
14 I'd like to point out that identification of the  
15 technical shortfall in DOE has been accomplished  
16 through several mechanisms. A historical record,  
17 which I've shown on this slide, shows reports from  
18 several highly regarded independent bodies that have  
19 discussed this subject. I've also got a slide which  
20 I'd like to put up to highlight Board recommendations  
21 that have formally addressed this issue to the  
22 attention of the Secretary of Energy. Of the 33

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1 recommendations issued by the Board to the Secretary  
2 to date, 12, as listed here, have included a direct  
3 discussion of the technical expertise of DOE  
4 personnel.

5 The Board has also provided the Department  
6 over two dozen letters addressing DOE technical  
7 competence, many enclosing trip reports generated by  
8 the Board's staff. Over the past years, the staff  
9 trip reports have focused on reviews of technical  
10 issues across the complex, during the course of which  
11 the staff has observed firsthand failure of DOE  
12 personnel to engage the issues at hand due to a lack  
13 of technical capabilities.

14 A summary of letters and reports provided  
15 over the last three years includes specific comments  
16 on Headquarters' staffs, as well as complex site  
17 staffs from Savannah River to Hanford, from Fernald to  
18 Pantex. I would like to provide as attachment to my  
19 testimony to the public record a list of the 24  
20 reports that were issued over the last three years.

21 CHAIRMAN CONWAY: It will be accepted  
22 without objection.

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1 MR. DWYER: And the Board and its several  
2 members have also conducted numerous individual  
3 discussions with DOE management regarding technical  
4 expertise in the Department.

5 In short, identification of the lack of  
6 technical expertise in DOE has occurred through  
7 methods, both formal and informal, highly specific and  
8 in broader, more general terms.

9 Now, of course, the most formal and direct  
10 indication of this problem with the DOE was  
11 Recommendation 93-3 and the basic elements of this  
12 recommendation have been discussed before. For  
13 purposes of this presentation, I will use the four  
14 categories shown on the slide and address each of  
15 these categories as a means of solving the problem  
16 identified.

17 With regard to technical hiring, DOE has  
18 several tools available to correct noted problems.  
19 DOE had 200 excepted service positions that were  
20 authorized under the Department of Energy Act which  
21 were not being used. As stated by Mr. Andersen, the  
22 excepted service personnel authority provides a proven

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1 means by which the Civil Service, in this case DOE,  
2 can attract highly qualified scientific and technical  
3 talent.

4 In 1994, DOE authorized approximately 1200  
5 new billets in the Defense Nuclear Complex. Most of  
6 these billets -- these are general schedule billets  
7 that were controlled by the Office of Environmental  
8 Management for distribution across the operations and  
9 field operations at various sites.

10 CHAIRMAN CONWAY: These are all new  
11 positions?

12 MR. DWYER: These were billets that they  
13 were authorized to fill. Some of them were not new  
14 but were just being made available to the  
15 Environmental Management. Approximately 100 of the  
16 new billets were allocated to control of the Office of  
17 Environment Safety and Health.

18 This provided another chance to hire a  
19 large number of highly qualified technical personnel.  
20 And as we've discussed, Recommendation 93-3 also  
21 advocated increasing the number of excepted service  
22 positions available to the Department and after

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1 personal efforts on the part of Board Members and  
2 General Counsel, 200 additional excepted service  
3 positions were made available to DOE in 1994.

4 In aggregate, the 1200 general schedule  
5 positions and the 400 excepted service positions  
6 represented a unique opportunity to substantially  
7 raise technical expertise in the Department.

8 Now I'd like to review how DOE has made  
9 use of these tools over the last two years. In  
10 Calendar 1994, DOE did not fill any excepted service  
11 positions in the Nuclear Complex. None of the  
12 original 200 excepted service positions were used to  
13 hire highly qualified scientific or technical  
14 personnel.

15 CHAIRMAN CONWAY: Let me interrupt.  
16 Obviously, the second 200 authority that was obtained  
17 by DOE didn't go through until November, which was  
18 near the end of the year, the Calendar Year, so we  
19 only had November and December in which to make use of  
20 that, once the law was signed.

21 MR. DWYER: Yes.

22 CHAIRMAN CONWAY: However, and I make a

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1 point of this, it had been made clear up on the Hill  
2 by those committees that had responsibility that they  
3 were going to go ahead and grant authority and the  
4 Executive Branch down to the President had no reason  
5 to believe he would not sign the law.

6 One of the objections I had at the time  
7 was since this had been in the mill for quite a while  
8 and we knew it was coming, preparations in no way were  
9 made to line up a number of people that they could  
10 have quickly moved to hire at that time. So the fact  
11 that the law didn't pass at least on the second 200,  
12 they previously had authority through previous  
13 legislation, but they could have been ready to move  
14 fast, if they had had the people prepared to move on  
15 it.

16 So personally I felt that the fact that no  
17 action was taken in 1994 because it wasn't until  
18 November that the Act was passed, that to me, was not  
19 a good excuse.

20 MR. DWYER: Yes sir.

21 MR. ANDERSEN: Mr. Chairman, could I  
22 clarify just one thing before Mr. Dwyer continues?

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1 And that is excepted service is an appointment  
2 mechanism. This is the bid of the personnel  
3 specialist approach, but I want to make it clear for  
4 the record is you have that authority and even though  
5 it talks in terms of numbers and statute, that's  
6 authorized. You still have to have the positions to  
7 fill.

8 Now in the case of the 1200, I believe Mr.  
9 Grumbley went back through OMB and was able to get  
10 1200 positions to fill. But the mere fact that you  
11 have the ability to use excepted service appointment  
12 authority for 400 positions is not the same as having  
13 those positions to fill. I wanted to distinguish the  
14 two.

15 CHAIRMAN CONWAY: Good.

16 MR. DWYER: If we move on to Calendar Year  
17 1995, we'll see at this point DOE had 400 available  
18 positions. They filled 33 of them and they were  
19 distributed as shown on the slide.

20 Despite the importance of this program,  
21 total effort after two years has resulted in effective  
22 use of less than 10 percent of the available excepted

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1 service personnel authority. From this, one can  
2 conclude that DOE has not aggressively taken advantage  
3 of the authority to recruit the highly qualified  
4 scientific and technical individuals that they need to  
5 raise the technical expertise of the Department.

6 This failure to use excepted service  
7 personnel can be put in the perspective if it is  
8 contrasted with the use of such authority by the Board  
9 in constructing its own technical staff. Sixty-seven  
10 excepted service positions have been filled. Each  
11 individual hired represents a significant investment  
12 of personal time to conduct screenings and interviews  
13 on the part of each Board Member and the staff thus  
14 assembled has been characterized by several external  
15 review groups as exceptionally technically capable, so  
16 over the same time frame in which DOE was not using  
17 excepted service personnel authority, the Board has  
18 used it to raise its own technical expertise through  
19 judicious use of the tool.

20 I'd like to point out that excepted  
21 service personnel authority was not the only tool  
22 available. While the excepted service positions were

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1 envisioned as a means to make the most significant,  
2 gains in senior management positions, the bulk of the  
3 technical positions to be filled in the complex were  
4 under general schedule authority and the 1200  
5 positions that we spoke of. That represented a  
6 significant portion of the means available to raise  
7 technical expertise. Therefore, in 1995, the Board  
8 staff requested that DOE provide data that would  
9 permit an evaluation of their effectiveness of  
10 attracting highly qualified scientific and technical  
11 personnel in '94.

12 I'd like to emphasize that the  
13 documentation provided by DOE was the only source  
14 material we used in this review. We did not conduct  
15 any performance evaluations in the field or any  
16 interviews or reference checks or use other  
17 information-gathering techniques.

18 The data that we were provided by DOE was  
19 467 resumes or Standard Form 171s and their associated  
20 position descriptions, and in some cases the vacancy  
21 announcements. Each set represented one individual  
22 who had filled the technical DOE billet. This data

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1 concerned only technical personnel hired in the  
2 defense complex in 1994.

3 It is significant to note that DOE had  
4 difficulty collecting this data and providing it to  
5 us. Initial figures concerning the 1994 hirings have  
6 been revised several times by factors of up to nearly  
7 100 percent, and internal discrepancies in the data  
8 provided by DOE has continued through the first three  
9 quarters of 1995.

10 Based on the data collection difficulty  
11 encountered, the Board staff concludes that no  
12 reliable mechanism exists for DOE senior managers to  
13 review the efficacy of technical personnel hiring  
14 efforts. The lack of feedback is a further indication  
15 of a failure to manage the process adequately.

16 To continue with our analysis, the four  
17 hundred forty five SF-171s and position description  
18 sets were evaluated to determine the degree to which  
19 each individual hired satisfied the grade level,  
20 eligibility requirements, ranking factors, and duties  
21 and responsibilities as described on the position  
22 description, under which he was hired.

1                   It's important that I emphasize the fact  
2 that the standard used to evaluate each person was the  
3 same position description used by DOE to determine  
4 that he was the best qualified candidate for the job.

5                   For each set, a grade was assigned ranging  
6 from 1 to 5. The grade of 1 signified that the  
7 individual did not meet the criteria of the associated  
8 position description and was not qualified for the  
9 assignment. The grade of 3 signified he met the  
10 minimum criteria associated with the position  
11 description. A grade of 5 signified that the  
12 individual exceeded most criteria and appeared to be  
13 an excellent match for the billet. The data was  
14 collected and is depicted in histogram form as shown.  
15 You'll note that the data approximates a normal or a  
16 Gaussian distribution and in fact, is strikingly  
17 similar to the smooth curve that has been superimposed  
18 on the histogram, which plots a normal distribution  
19 constrained for 445 data points with a mean score of  
20 3 or marginal.

21                   The significance of the similarities  
22 between the two plots is based on the fact that the

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1 smooth curve represents a hiring process in which the  
2 desired outcome is selection of a marginally qualified  
3 candidate and in which selection of a highly qualified  
4 candidate occurs with no greater frequency than that  
5 expected of a random process.

6 A more telling comparison can be made by  
7 considering how much improvement is required to begin  
8 raising technical expertise. This would require that  
9 DOE had not hired any technical personnel who would  
10 score below marginally qualified. If this criteria is  
11 applied, fully 30 percent of the 1994 hires would not  
12 be selected.

13 Note that from the '94 data, less than 10  
14 percent of the data pairs were scored as highly  
15 qualified for the positions in question.

16 If we restrict the analysis to just the  
17 more senior positions, that is GS-14, 15 or SES, we  
18 get the same distribution.

19 It should be noted at this point that this  
20 data was presented to DOE and particularly to  
21 representatives of the Office of Human Resources and  
22 discussed with the Assistant Secretary for Human

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1 Resources in a meeting on October 5th of 1995. DOE  
2 personnel responded by indicating that while they  
3 acknowledged some difficulties may have occurred in  
4 1994 in technical hiring practices, there was no need  
5 nor was there any intention on the part of the  
6 Department to conduct a review such as this since DOE  
7 had done a much better job in 1995.

8 We analyzed the 1995 data provided by DOE.  
9 This is only through the first three quarters. We do  
10 not have fourth quarter data yet. As shown here, the  
11 data is overlaid on the original 1994 histogram and  
12 Gaussian curve. It indicates that in 1995, the  
13 general schedule hiring effort did not improve  
14 relative to 1994.

15 CHAIRMAN CONWAY: It went the other way.

16 MR. DWYER: Yes sir. You could draw that  
17 conclusion. And it should be noted that almost half  
18 of the '94 and '95 technical hires were already  
19 employees of DOE when they accepted their position.  
20 Approximately 50 percent of these internal hires were  
21 promotions. If you restrict the analysis to just the  
22 senior levels, GS-14, 15 and SES, the proportion of

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1 technical hires drawn from the DOE population rises to  
2 approximately 80 percent.

3 In conclusion, the Board staff realizes  
4 that DOE general schedule hiring practices did not  
5 result in hiring a significant number of technical  
6 personnel who are highly qualified in '94 or '95. The  
7 technical applicant hiring process in '94 tended  
8 toward selection of the marginally qualified  
9 candidate. The technical applicant hiring process  
10 used in 1995 showed no improvement over that used in  
11 1994.

12 CAPT. CRAWFORD: Mr. Dwyer, I'm most  
13 mindful of the -- not mandate, but admonition the  
14 Board was given by Congress to raise the level of  
15 technical expertise substantially. That was the word.

16 I would gather from what you said here,  
17 that the hiring that took place in 1994 and first  
18 three quarters of 1995 have not contributed to the  
19 achievement of that objective.

20 Do you have any comment on that?

21 MR. DWYER: I would agree with that  
22 comment, sir.

1 DR. EGGENBERGER: Mr. Dwyer, with respect  
2 to your conclusions, you had to derive them by using  
3 a set of criteria. There were many.

4 MR. DWYER: Yes sir.

5 DR. EGGENBERGER: Was there any particular  
6 criterion that tended to push the distribution toward  
7 the marginal? In other words, if you had -- you had  
8 a set, you had criterion 1, 2, 3, 4, 5, 6. So if one  
9 wants to dispute your conclusions, one picks on each  
10 individual criterion. I mean that's the way one would  
11 dispute them.

12 Now, you said that what you used was a  
13 match between the individual as he or she was  
14 represented and the requirement. Is that my correct  
15 understanding? The requirement being the position  
16 description?

17 MR. DWYER: Yes sir. The individual  
18 position description against which he was hired. For  
19 each analysis, we used a different position  
20 description.

21 DR. EGGENBERGER: I understand that. Now,  
22 what particular aspects of the position description

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1 were not met in the most often case? Do you have any  
2 feeling for that? In other words, was it an  
3 educational delta? Was it a performance delta? Was  
4 it an experience delta? What was the problem?

5 MR. DWYER: In that regard, sir, there was  
6 no one mismatch that stood out above all others. There  
7 were numerous educational mismatches. There were  
8 numerous experience mismatches. There were some  
9 mismatches that had to do with the individual in  
10 question of applying for a job in which he did not  
11 meet the time in grade criteria when we were talking  
12 about internal hires.

13 There were some mismatches that occurred,  
14 well, as I've already said, due to the experience that  
15 they showed on the 171 and the background requirements  
16 in the position description.

17 DR. EGGENBERGER: So there was not one  
18 main one that you recall that caused the most  
19 mismatches?

20 MR. DWYER: No sir.

21 DR. EGGENBERGER: Is there -- if you were  
22 doing this operation in the selection yourself, is

1 there any one thing that you would look at in  
2 screening the candidates that would help push it up  
3 toward the more acceptable point of view? In other  
4 words, there's a problem here. There needs to be a  
5 solution and so I guess I'm asking you, do you have  
6 any ideas at this point in time of how the selections  
7 could be made better? For example, do you select all  
8 your candidates and require them all to have three  
9 courses in mathematical physics or something? In  
10 other words, I'm trying to get the understanding of  
11 what they can do to push it up and make it better.

12 MR. DWYER: Well, sir, part of the  
13 difficulty, in our estimation in doing the analysis  
14 lay in the quality of the position descriptions. In  
15 many cases, the position description themselves  
16 contained contradictions or in some cases very poor  
17 criteria against which to evaluate a candidate.

18 If you're asking me what particular  
19 criteria I would use given the chance to do the  
20 hiring, the first and the easiest answer is to make  
21 sure that the person indeed satisfies the criteria in  
22 the position description. The other answer would be

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1 to place more weight on the engineering or scientific  
2 educational background than appeared to be placed in  
3 the data we reviewed.

4 DR. EGGENBERGER: So that was a lacking  
5 item, generally, was the -- just the fundamental  
6 background?

7 MR. DWYER: In some cases, yes sir.

8 DR. EGGENBERGER: Okay.

9 CAPT. CRAWFORD: Dr. Eggenberger, if I  
10 might, I'm just going to be telling you something that  
11 you know very well, but it might be useful for the  
12 record.

13 It seems to me that the process that the  
14 Board uses is not a bad one for acquiring talent. All  
15 applicants for positions of the Board are referred to  
16 the five Board Members and the Technical Director or  
17 General Counsel, as appropriate.

18 We look at them and decide whether this  
19 person merits an interview. Okay. If he merits an  
20 interview, they're invited to come in and on that  
21 occasion each Board Member and the Technical Director  
22 interviews them and I won't say it requires unanimity,

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1 but it certainly requires a large degree of consensus  
2 that that person ought to be made an offer.

3 Now what are the ingredients? The first  
4 ingredient is personal attention by the top people in  
5 the organization, either to interview or to put the  
6 interviewing process in the hands of people whose  
7 judgment and standards you respect. So I think that  
8 something akin to that would be a highly powerful way  
9 of upgrading this poor performance.

10 CHAIRMAN CONWAY: Now let me make it  
11 clear, however. We are talking about "technical"  
12 people. So technical people come by their technical  
13 competence by education, that they're trained in the  
14 technical areas, whether it be engineering or one of  
15 the scientific disciplines. Then there comes  
16 experience. People who have spent time in a  
17 particular area and have -- based on their record, can  
18 demonstrate technical competence, so it seems to me  
19 and we're only limiting ourselves to technical  
20 personnel, you start initially does that person that  
21 you're considering for a technical position, does that  
22 individual have the particular technical background

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1 that makes it possible for him or her to do technical  
2 work. So you have to start, it seems to me, with  
3 their education and their specific training and then  
4 at the level that they will be operating. So I assume  
5 when you were going through the criteria, you were  
6 looking to see what is the technical job itself and  
7 you have to evaluate that, what level of technical  
8 competence are you expecting to call the person upon.  
9 And some would require a Bachelor of Science in  
10 engineering. Some would go even higher, obviously, of  
11 having a Ph.D. in that particular discipline. So you  
12 have to start, it seems to me, with what is the  
13 particular position the person is being required to  
14 fill.

15 So I assume that's what you did when you  
16 reviewed what the job description was and what the  
17 responsibility was. Then you have to match that to  
18 agree with what the individual who was selected for  
19 that position and then you say, do they match with  
20 what is going to be expected of the individual and  
21 they assume when you've made these reviews, the  
22 matches as they fell within that bell curve is the way

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1 you indicated is the basis of your evaluation and your  
2 associates' evaluation, did they meet the requirement  
3 of that particular job from a technical point of view.

4 MR. DWYER: Yes sir.

5 DR. EGGENBERGER: Mr. Chairman, may I add  
6 as a subset to your -- the criteria of education and  
7 experience, the criterion of graduate school. In this  
8 era of changing ways of doing business and changing  
9 needs, it's very important for the individuals to be  
10 broad-based individuals with a lot of experience and  
11 the ability to adjust to new and differing things.  
12 And generally one cannot just get that through  
13 undergraduate school and I think an emphasis needs to  
14 also be placed on the necessity for advanced  
15 education, not only training, but advanced education.

16 Now if I recall from looking at the  
17 details of your distributions, one of the key things  
18 that you looked at in evaluating basic qualifications  
19 was first did the person come from a background which  
20 one would call highly acceptable to the general  
21 technical community? In other words, you evaluated  
22 whether the person came from a background of a highly

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1 skilled engineering school versus a nonengineering  
2 background and you put some evaluation of that. Is  
3 that right?

4 MR. DWYER: Yes sir. You're recalling  
5 that we did some evaluation of the schools which  
6 people were being selected from, but that was a  
7 separate evaluation. It did not enter into this  
8 determination.

9 DR. EGGENBERGER: Okay, so as far as the  
10 basic background, that did not come into this?

11 MR. DWYER: No sir. It was merely did  
12 they or did they not have an appropriate degree.

13 DR. EGGENBERGER: Okay.

14 MR. DWYER: It did not have any basis on  
15 what school they obtained that degree from.

16 DR. EGGENBERGER: Wouldn't you also do  
17 that? I mean this is a very controversial subject,  
18 but it's one that you know, quality of institutions  
19 are made by their faculty and the results of their  
20 graduating students and that's how quality is  
21 determined.

22 MR.. DWYER: Yes sir. The fact that I

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1 would do that did not enter into the evaluation that  
2 we did.

3 DR. EGGENBERGER: Okay. Thank you.

4 MR. DiNUNNO: May I ask a couple of  
5 questions, Mr. Chairman?

6 CHAIRMAN CONWAY: Yes.

7 MR. DiNUNNO: Mr. Dwyer, I find the  
8 statistics here rather interesting and very telling.  
9 A couple of questions though, the 400 some odd  
10 positions you looked at were hires across the complex,  
11 the entire complex, they were not DOE headquarters, I  
12 assume.

13 MR. DWYER: That is correct, sir, in the  
14 field and at headquarters.

15 MR. DiNUNNO: Did you find or did you look  
16 to see whether there was a difference in that kind of  
17 a curve if you took it site by site? Because  
18 obviously these hires are done by different people  
19 under different organizations and so I would have  
20 thought, based on what I have observed in terms of  
21 technical competence from one site to the other, there  
22 is a distribution and this must go back to the

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1 management of those sites in terms of the emphasis  
2 they placed on hires, but did you see a difference or  
3 did you look at a difference?

4 If I were Mr. Evans over there and I  
5 wanted to go to those places that that done perhaps an  
6 excellent job as opposed to those who had done a  
7 poorer job, where would I go in the complex, for  
8 example? What could I learn from somebody who may  
9 have done something better than somebody else?

10 MR. DWYER: Well, sir, we attempted to do  
11 a breakdown by site. The problem we ran into was that  
12 for many of the sites, when you break out that  
13 particular data set it gets so small as to be  
14 insignificant, statistically.

15 For the larger recruitment bodies, for  
16 example, at Hanford in this particular case, we have  
17 over 100 data points. So we were able to do an  
18 analysis and it came out approximately the same, a  
19 little lower, but approximately the same as the shape  
20 of the aggregate bell curve.

21 MR. DiNUNNO: If I took --

22 DR. CUNNINGHAM: Mr. DiNunno?

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1 MR. DiNUNNO: Yes.

2 DR. CUNNINGHAM: If I might interrupt here  
3 for just a second. We did find some cases where there  
4 was marked improvement and Mr. Krahn is going to talk  
5 about some of those cases later in the testimony here.

6 MR. DiNUNNO: That's fine. The other  
7 question was that having provided DOE with this  
8 information, some time back, as I understand from your  
9 testimony, this is not the first time these statistics  
10 and these facts have been presented to DOE, but that  
11 you had had some discussions and you presented this  
12 information earlier. Is that true?

13 MR. DWYER: With the exception of the 1995  
14 data that is a true statement, sir.

15 MR. DiNUNNO: Has anyone there attempted  
16 to confirm your own assessment, your own judgments on  
17 this by doing independently an assessment of the same  
18 data?

19 MR. DWYER: Not to my knowledge, sir.

20 MR. DiNUNNO: So it wasn't taken all that  
21 seriously? Or maybe they accepted your evaluation?

22 MR. DWYER: I don't know how to answer

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1 that question, sir. I would have to ask.

2 MR. DiNUNNO: All I'm saying to you is if  
3 you had presented that data to me, as an independent  
4 outsider, I would have immediately asked my own  
5 personnel people is this really true or is it not? Is  
6 there a difference that needs to be resolved and I  
7 guess I'm a bit surprised that somebody didn't either  
8 confirm or argue with you with respect to the data  
9 presented. So that's what I would normally have  
10 expected, and certainly with respect to the  
11 information presented here, I would like to think that  
12 the DOE people picking up on this would certainly  
13 attempt to reaffirm or deny, if you will, come back  
14 and rebut this kind of information, just as a matter  
15 of following up on data of this sort, it seems to me.

16 DR. EGGENBERGER: Mr. DiNunno, I think  
17 hopefully we'll have the opportunity to do this in a  
18 later hearing.

19 CHAIRMAN CONWAY: Go ahead.

20 MR. DWYER: Up to this point we've been  
21 talking about the acquisition of scientific and  
22 technical expertise and as shown DOE has not been

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1 well-focused on this effort. They have placed  
2 emphasis on an alternate means of raising technical  
3 expertise and that's improving the technical expertise  
4 of the incumbent staff within the selected programs.

5 The centerpiece of the DOE effort to  
6 upgrade the technical expertise of its incumbents is  
7 the technical qualification program that they have set  
8 up. The program has been under development since  
9 November of 1993. Under the original Recommendation  
10 93-3 implementation plan, it was to have been  
11 implemented and initially assessed by December of  
12 1995. Delays in developing several aspects of the  
13 program led to the current situation in that the  
14 technical qualification program was officially  
15 instituted on December 31, 1995, but several requisite  
16 pieces were still not in place.

17 In brief, the program delineates the  
18 following steps to be followed by each DOE technical  
19 person. They must complete the general technical base  
20 qualification standard. They must complete one of 23  
21 complex-wide technical specialists' qualification  
22 standards, sometimes called functional area

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1 qualification standards. Sections that are deemed not  
2 applicable to their current position may be exempted.  
3 Then they must complete a site or facility-specific  
4 technical specialist qualification standard and these  
5 are to be locally produced at each site.

6 The technical qualification program  
7 functional areas are as shown on this slide. I won't  
8 read them. I'll give you a second to look at them.  
9 Once an incumbent DOE technical person has been  
10 identified by his management and assigned to his  
11 functional area, he has until May 1998 to complete his  
12 qualification requirements. Newly reporting personnel  
13 will be given two years from their date of reporting  
14 to complete their qualification requirements.

15 The site or facility specific technical  
16 specialist qualification standards are intended to  
17 provide tailored competencies beyond those found in  
18 these complex-wide standards, but determined to be  
19 necessary either by their Cognizant Secretarial  
20 Officer or their field office manager. They were to  
21 be in place when the program was initiated in  
22 December. Many are not yet developed.

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1           Of note, one issue is determining what  
2 positions must be categorized as technical and  
3 therefore be included in this program. It's left up  
4 to the individual CSOs and field office managers, who  
5 are given certain ground rules:

6           This does not apply to Executive Service  
7 personnel, only GS-15 and below.

8           If they are in the 800 or the 1300  
9 occupational series, that's the engineer or the  
10 scientist series, they must participate if they're  
11 assigned in the Defense Nuclear complex.

12           If, according to their duties and  
13 responsibilities, they provide direction, guidance,  
14 oversight or evaluation to contractor technical  
15 activities, they must participate.

16           Or the CSO or field office manager may  
17 arbitrarily select them to participate.

18           Exemptions and exceptions to qualification  
19 standard competencies are allowed, as recommended by  
20 each employee's supervisor, although they are approved  
21 by the second level supervisor above him.

22           The decision to pursue exemptions or

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1 exceptions is at the discretion of the employee and  
2 his supervisor.

3 Now the Board staff has been reviewing the  
4 basic program throughout its development process and  
5 we have issues with four particular aspects of the  
6 implementation as shown on this slide. I'll be  
7 addressing each of these four issues in turn.

8 First, reviews of the assignment of  
9 personnel to functional areas at the various  
10 operations offices and headquarters have revealed a  
11 lack of any senior level management or planning of the  
12 assignment process. For example, after initial  
13 assignments were made, we found that the Richland  
14 Field Office assigned no federal expertise in the  
15 areas of civil structural engineer, construction  
16 management and engineering, electrical engineer or  
17 instrumentation and controls engineer, despite the  
18 significant efforts that are underway at that site to  
19 maintain, sample, and design processing systems for  
20 the 177 high level waste tanks they have there.

21 Rocky Flats Field Office, for example,  
22 also had no assigned federal expertise in areas of

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1 construction management and engineering, or facility  
2 maintenance management, despite significant on-site  
3 problems in these areas.

4 Further, a significant number of technical  
5 personnel at Rocky Flats remain unassigned as to  
6 functional area.

7 A third issue is that significant numbers  
8 of people had selected the technical manager and  
9 project manager qualification standards as their  
10 primary functional area. The Board staff has  
11 identified these two standards as inadequate due to  
12 their lack of technical requirements.

13 CAPT. CRAWFORD: Are you saying that  
14 they're opting for an easy merit badge?

15 MR. DWYER: Yes sir. You could construe  
16 it that way.

17 That leads us to the next issue, which is  
18 the adequacy of the qualification standards. The  
19 Board staff reviewed the 23 complex-wide qualification  
20 standards that DOE developed. It was assumed the  
21 implementation of the qualification standards would be  
22 effective, for purposes of the review, and we only

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1 reviewed the competencies and their supporting  
2 knowledge and skill factors as contained in the  
3 documents.

4 Based on that review, 12 of the  
5 qualification standards require specific improvements.

6 Five of the qualification standards are  
7 marginal, in particular, electrical systems engineer  
8 and the I & C control -- I'm sorry, the  
9 instrumentation and control engineer -- do not include  
10 any focus on safety class systems. Waste management  
11 focuses on regulatory issues to the detriment of  
12 technical issues. Fire protection does not  
13 specifically invoke fire protection engineer  
14 requirements, and the chemical processing standard  
15 does not adequately treat process safety or design  
16 considerations.

17 Three qualification standards that we  
18 reviewed are inadequate. As I said, the technical  
19 manager and the project management standards fall in  
20 that category.

21 CAPT. CRAWFORD: Now I just thought I  
22 heard you say that that's the one that everyone wants

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1 to qualify under, a large number of them.

2 MR. DWYER: Yes sir.

3 CAPT. CRAWFORD: And they're the ones that  
4 are clearly inadequate?

5 MR. DWYER: Yes sir, those two, and the  
6 radiation protection standard. It does not adequately  
7 describe requirements for the key radiation protection  
8 positions that were separately identified under  
9 Recommendation 91-6.

10 At this point, the site or facility  
11 specific functional area qualification standards  
12 remain a significant unknown. None have been reviewed  
13 yet and many are not yet developed.

14 DR. EGGENBERGER: Mr. Dwyer, let me  
15 interrupt you. I hate to use the term because it's  
16 not understood by many. With respect to the  
17 qualifications standard, how do you determine that  
18 it's sufficient? It obviously, by definition, is  
19 necessary, but is it sufficient to actually preserve  
20 a qualified person?

21 The reason that I bring that out is I  
22 personally have reviewed several of them with you and

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1 they tend to be a list of things that are necessary  
2 for one to know, but I'm not sure understand. And  
3 when one tends to have a list of things, an important  
4 idea is how do they all fit together? I haven't seen  
5 that in the basic qualification requirements.

6 Now do you think that maybe the site  
7 specific qualification documents will be those things  
8 that will make it sufficient? This has always  
9 bothered me.

10 MR. DWYER: No sir.

11 DR. EGGENBERGER: For example, in the  
12 basic qualification statements there will be things  
13 there like "tell me something about the Bohr model,"  
14 correct?

15 MR. DWYER: Yes sir.

16 DR. EGGENBERGER: Well, that's a subset of  
17 nuclear physics and that's like saying tell me  
18 something about simply supported beams, which is a  
19 subset of structural engineering. Just because you  
20 know one or the other, I just don't understand how  
21 this all fits together. I think it's a rather naive  
22 approach.

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1 Do you agree or disagree?

2 MR. DWYER: Sir, one of the issues that  
3 the staff had in their review was that the approach  
4 being taken, the qualification lists, as you have  
5 outlined, did not seem coherent. There was no  
6 overarching means to say this person understands  
7 chemical engineering or this person understands  
8 electrical engineering and in answer to your question,  
9 no, I do not expect that the facility or the site  
10 specific qualifications standards will compensate for  
11 that.

12 CHAIRMAN CONWAY: Maybe you can help me.  
13 Who draws up the specs for these particular jobs? Is  
14 it the line management responsible for doing the work  
15 or is it an outside administrative-type person that  
16 goes to some book and takes out a list of things that  
17 are supposed -- I'm thinking about a professional  
18 educator as opposed to those who -- administrators as  
19 opposed to educators, in that field something  
20 comparable.

21 MR. DWYER: Yes sir. The qualifications  
22 standards were drawn up under the auspices of the

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1 technical personnel coordinator, and coordinating  
2 committee. The gentlemen on the HR staff who oversaw  
3 that process would solicit, from field offices and  
4 from headquarters, personnel to come and assist them.

5 CHAIRMAN CONWAY: These are technical  
6 people who are responsible for getting the technical  
7 jobs done. I'm trying to determine who writes the  
8 specs for the particular individual technical position  
9 that's being considered. That to me is the heart of  
10 the matter.

11 MR. DWYER: Are you asking about the  
12 position description?

13 CHAIRMAN CONWAY: Yes, the position  
14 description. Anything you're going to judge. When  
15 you go out and you take a look at a position that the  
16 person is supposed to fill and then you look at the  
17 person's qualification and, if I understood you  
18 correctly, you make a comparison. Who writes the  
19 particular job description of what is required for  
20 that job and is it somebody who is a personnel expert  
21 or is there a technical management person who knows or  
22 has responsibility for getting that job done and says



1 this is the type of person I need and he or she has to  
2 have these technical qualifications. To me that's the  
3 heart of the matter. Who writes the specific  
4 requirement of what that job needs in the point of  
5 view of technical competence?

6 DR. CUNNINGHAM: Also, Mr. Dwyer, is this  
7 prepared by internal technical staff or is it an  
8 outside contractor?

9 MR. DWYER: Okay, we're talking about two  
10 different pieces, Mr. Chairman.

11 CHAIRMAN CONWAY: Okay, go ahead.

12 MR. DWYER: The technical qualification  
13 standards are different from position descriptions and  
14 in fact, are not related at this point in time.

15 CHAIRMAN CONWAY: Well, then I've lost the  
16 thread.

17 DR. EGGENBERGER: That's the point.

18 MR. DWYER: If you'd like, sir, I can  
19 provide a written answer to that question for you.  
20 [attached].

21 CHAIRMAN CONWAY: I'll need to go over  
22 that because I'm having difficult right now of

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1 determining do they or do they not have technically  
2 competent people to do this work and as they go out  
3 and use the excepted service, are they or are they not  
4 getting the people that should be obtained technically  
5 competent people, to do the job.

6 MR. DiNUNNO: I think I understand  
7 basically what the intent is here. In effect, this  
8 standard is a set of general requirements. If you  
9 want to qualify as an electrical engineer, there are  
10 certain prerequisites. One, you have to have an  
11 engineering degree, I assume, or some equivalency.

12 MR. DWYER: Yes sir.

13 MR. DiNUNNO: And this was an attempt to  
14 identify or codify certain basic requirements to  
15 satisfy just the essential elements to occupy a  
16 position of this sort. It has very little to do with  
17 your ability to perform a particular function or job.  
18 That comes through an examination of what the job  
19 really entails and then the explicit qualifications  
20 may be required for that job.

21 I can talk about electrical engineering  
22 because the electrical engineering I had when I was in

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1 school was far different than what electrical  
2 engineers study today and come out with. One can be  
3 an electrical engineer today by graduation in a degree  
4 and be totally incompetent to handle some of the  
5 electrical problems that occur at the site. So it has  
6 to be a match between an educational background that  
7 may deal with computers and highly sophisticated and  
8 electronic equipment, but people of that sort may not  
9 even know what a diesel generator does and what a  
10 circuit breaker is required to perform. So one has to  
11 match on a site specific or presumably specific, those  
12 requirements or experience that pertain to that  
13 particular job, not necessarily the degree. I assume  
14 the degree or the satisfaction of this particular  
15 standard gets you in the door to get you a job, that  
16 allows you to enter into that door. Is that basically  
17 what we're talking about here?

18 MR. DWYER: No sir. No sir. Getting you  
19 in the door is the position description and the hiring  
20 process.

21 MR. DiNUNNO: Oh, I understand that, but  
22 I can't even be considered qualified to be a candidate

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1 for that position unless I have some sort of  
2 qualifications of this kind.

3 MR. DWYER: Yes sir, but the technical  
4 standards that we're talking about here are after the  
5 hiring process.

6 DR. CUNNINGHAM: Mr. DiNunno, if I might  
7 --

8 MR. DiNUNNO: Obviously, we need some  
9 clarification to this since we don't understand that.

10 DR. CUNNINGHAM: If I might make a comment  
11 here. The earlier discussion regarding the position  
12 descriptions had to do with the selection, hiring and  
13 placement of personnel.

14 What we're talking about here on the  
15 technical qualification is part of an overall effort  
16 by DOE to upgrade people who are in place. Therefore,  
17 if you have needs for chemical engineers or processing  
18 engineers or what have you, and you want to upgrade  
19 your staff to be able to deal with and handle those  
20 problems, then you put in place this qualification  
21 program to qualify them for those specific areas. I  
22 think that's what we are trying to describe here and

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1 I think we're saying in terms of answering the  
2 Chairman's question that we had difficulties, first of  
3 all, with the position descriptions as they were  
4 written which made it difficult for us to evaluate,  
5 although we made no judgment as to whether that  
6 position, in fact, was a good position or bad position  
7 or needed or not needed. We simply compared what DOE  
8 did, that is, they had a position description which  
9 they described as their need and we said, "did you  
10 meet your need?"

11 On the other hand, with regard to  
12 technical qualification, we tried to look at that from  
13 the standpoint of we know what some of the needs and  
14 concerns are out there and to look at it from the  
15 standpoint of if the person met that qualification,  
16 would that person be in a better position to help DOE  
17 solve problems in that area. In terms of who wrote,  
18 described these things, I don't know whether you have  
19 the answer, Tim, or whether we need more data, but  
20 it's my assumption that DOE had outside contractors  
21 help them prepare this documentation.

22 MR. DiNUNNO: Okay, I think I'm back on

1 track. I have an individual in a position that is an  
2 electrical engineer, for whatever reason. But  
3 somebody has made a determination that his  
4 qualifications need to be upgraded, so this is part of  
5 the upgrade process you're talking about. The initial  
6 upgrade process.

7 MR. DWYER: Yes sir.

8 MR. DiNUNNO: And it goes from this  
9 general to the facility and site specific which is not  
10 yet in place, but it's --

11 MR. DWYER: Yes sir, they must complete  
12 the general departmental technical standard and then  
13 a specific functional area, department-wide standard  
14 and then the facility specific.

15 MR. DiNUNNO: So this is part of an in-  
16 house upgrade or training program that you get as an  
17 employee?

18 MR. DWYER: Yes sir.

19 DR. EGGENBERGER: But the-- it's exactly  
20 like a reactor operator. Everybody has a qual. card?

21 MR. DWYER: Yes sir, very similar.

22 DR. EGGENBERGER: Similar to that, but I

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1 still am worried about the sufficiency thing and Mr.  
2 Crawford, maybe a good way of sufficiency would be to  
3 just give everybody an SAT test.

4 CAPT. CRAWFORD: I share the concern from  
5 the documents that I've looked at. I share the  
6 concern that I believe is being raised by Dr.  
7 Eggenberger. I looked at one and saw, "what is  
8 Avogadro's number?" You know that is what you get in  
9 a physics course, but I don't think any assembly,  
10 however large, of factoids like that are going to make  
11 a person or demonstrate that a person is capable of  
12 the integration of a large body of knowledge and makes  
13 him an effective operator in a specific task. There's  
14 very little relation to it.

15 MR. DWYER: Mr. Chairman, I'd still like  
16 to provide a written response to tie all this  
17 together.[attached] Obviously, there was some  
18 confusion.

19 CHAIRMAN CONWAY: Fine.

20 MR. DWYER: To continue, much of the  
21 training to meet the qualification standards that they  
22 developed has not yet been identified or developed and

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1 promulgated. New training packages to meet the  
2 qualification standard competencies are developed  
3 under the lead site concept, but they are not all  
4 complete. This includes development of any new  
5 courses they need to set the standard for various  
6 competencies.

7 Equivalency determinations, that is,  
8 specific licenses or certificates or experience or  
9 existing training complex courses that an incumbent  
10 may have already taken that would be deemed  
11 satisfactory for purposes of some competencies have  
12 not yet been developed or promulgated. A pilot  
13 program that was being developed under DP to identify  
14 the equivalencies has not been formally endorsed for  
15 use across the complex and also is not complete.

16 Program implementation also is left to the  
17 individual CSO and the field office managers. They  
18 develop their own implementing instructions and  
19 significant variability in the methods and the rigor  
20 of application that have been observed to date and the  
21 means used to evaluate some of this factory mastery of  
22 a competency is also subject to question as

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1 illustrated in the next issue.

2 A key element of the technical  
3 qualification program is the determination of the  
4 difference, or the delta, if you will, between the  
5 knowledge and skills and abilities possessed by the  
6 incumbent as measured against those required by his  
7 qualification standard. This determination is being  
8 left to his supervisor with little or no guidance.  
9 It's not clear that each of the supervisors  
10 understands the significance of their actions with  
11 respect to qualification signatures or exemptions and  
12 equivalencies, and perhaps more importantly, the delta  
13 determination is being made by supervisors whose  
14 technical expertise is itself suspect, and whose  
15 qualifications are not further defined by the  
16 qualifications standards.

17 DR. EGGENBERGER: Is the supervisor  
18 required to also possess a qual card in a particular  
19 area?

20 MR. DWYER: If he meets the criteria that  
21 I delineated before. It's not necessarily true that  
22 the supervisor will be in the qualification program.

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1 For example, if he is in SES, he will not be in the  
2 qualification program.

3 DR. EGGENBERGER: So it's a fallacy in the  
4 whole thing?

5 MR. DWYER: Yes sir.

6 CHAIRMAN CONWAY: Except an SES must be  
7 evaluated on a 90-day basis to verify that that SES is  
8 capable of doing his or her job and if not, supposedly  
9 to be removed from the SES and move back down. So  
10 there is a process, whether it's being adequately  
11 implemented is another matter, but SES, as I  
12 understand it, is a requirement that that SES must be  
13 evaluated on an annual basis, so there is an  
14 evaluation process to do that.

15 MR. DWYER: Yes sir, but it is outside of  
16 this qualification.

17 CHAIRMAN CONWAY: Out of this  
18 qualification, but there is a separate one for SESs.  
19 That's my point.

20 MR. DWYER: Yes sir. I'd also like to  
21 turn beyond the technical qualification program, to  
22 education as providing another method for improving

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1 current DOE technical work force.

2 Many of the Department's technical needs  
3 cannot be addressed by training alone. Rather, they  
4 require formal, academic, educational methods.  
5 Recommendation 93-3, the implementation plan, in  
6 particular, committed to expand present programs and  
7 create additional educational opportunities.  
8 Education needs above entry level were to be defined  
9 by technical succession planning and career path  
10 development.

11 These programs have not been defined and  
12 moreover, revisions to DOE's order 360.1, Training,  
13 have restricted entry into the education programs in  
14 the Department. As a further difficulty, the  
15 technical personnel performance indicator report which  
16 was identified as a means of tracking educational  
17 achievements has provided only indications for  
18 portions of the technical personnel educational  
19 activities and the data that is provided has proven to  
20 be unreliable.

21 In summary, the data that I've presented  
22 in this testimony indicates that excepted service

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1 personnel authority has not been used aggressively by  
2 the Department to obtain highly qualified, scientific  
3 and technical expertise. General schedule hiring  
4 processes used by the Department are ineffective with  
5 regard to identifying and hiring employees well  
6 matched to the technical requirements of their  
7 positions. The technical qualification program, which  
8 is the main effort underway to raise the technical  
9 expertise of incumbents is suspect. And the technical  
10 education program remains ill-defined.

11 CHAIRMAN CONWAY: Okay, on that third  
12 bullet, qualification program being suspect. We  
13 recently received information that at least in one  
14 field office there is a resistance on the part of  
15 incumbents to take the tests and develop or be able to  
16 demonstrate their qualification. An effort is being  
17 made to prevent DOE from forcing the DOE employees  
18 from -- preventing them from doing this work. Have  
19 you come across that at all in any other area?

20 MR. DWYER: No sir, just at the one site  
21 and DOE Headquarters, the Office of Human Resources is  
22 aware of that problem and in conversations with them,

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1 they believe it to be an anomaly.

2 CHAIRMAN CONWAY: That's the same field  
3 office, as I recall, that DOE personnel, a number of  
4 them, were refusing to go out to the field when they  
5 were being moved out to the site because they thought  
6 it was too dangerous and DOE personnel should not be  
7 at the site. So that's the same field office that had  
8 that problem also.

9 MR. DWYER: Yes sir.

10 CHAIRMAN CONWAY: Okay.

11 DR. CUNNINGHAM: Mr. Chairman, as part of  
12 our continuing effort to not only review this area,  
13 but to evaluate the implementation, we have also been  
14 continually reviewing and looking at the work in the  
15 field and at this time I'd like to ask Mr. Steven  
16 Krahn to discuss some case studies which involve the  
17 DP program, both at Headquarters and in the field.

18 Steve?

19 MR. KRAHN: Thank you. Good morning, Mr.  
20 Chairman, Mr. Vice Chairman, Members of the Board, Dr.  
21 Cunningham. My name is Steve Krahn. I'm presently  
22 the Board's Assistant Technical Director for

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1 Operational Safety. Previously, until August of the  
2 previous year I served as Assistant Technical Director  
3 for Weapons Programs where I had the opportunity to  
4 work very closely with DOE's Defense Programs Office  
5 on technical competency matters.

6 The purpose of my testimony today is to  
7 provide you a summary of some important actions taken  
8 on this subject with DP over about the last two years,  
9 some case studies, if you will, as Dr. Cunningham  
10 stated. I have provided a detailed copy of my  
11 testimony already. I, like the General Counsel, I  
12 will summarize what is in that --

13 CHAIRMAN CONWAY: The written testimony  
14 will be accepted as if read.

15 Proceed.

16 MR. KRAHN: Thank you, sir. As the Board  
17 has noted in the past, the DOE weapons complex  
18 functions effectively and safely because of a wealth  
19 of highly qualified, experienced individuals. These  
20 individuals reside, to a large degree, with DOE's  
21 laboratories and contractors. This dependence on  
22 individual expertise led, however, to an informality

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1 of operations and a lack of a well-defined selection,  
2 training and qualification program within the  
3 Department.

4 DOE's dependence on the expertise and  
5 experience at the national laboratories and their  
6 management and operating contractors has led to a  
7 degradation of their own organic technical capability.  
8 This trend has been accelerated by DOE's reductions in  
9 force and incentive programs for early retirement.  
10 This degradation has led to a situation where  
11 technical competence is an issue at all levels within  
12 DOE's Office of Defense Programs.

13 In December of 1993, the Board issued  
14 Recommendation 93-6 concerning the Department's  
15 ability to maintain access to nuclear weapons  
16 expertise. The Board's area of concern in this  
17 recommendation focused on, and I quote, "insuring the  
18 capability is maintained to conduct testing operations  
19 safely if they must be done and that all future  
20 dismantlement activity can be completed safely." The  
21 Secretary of Energy accepted the Board's  
22 recommendation in February of 1994.

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1                   In May of that year, she requested a 45-  
2 day extension for completing her implementation plan.  
3                   On May 27th, the Board wrote back to the Secretary,  
4 acknowledging the extension request, but emphasizing  
5 that some aspects of that recommendation had a high  
6 degree of associated urgency. Specifically, the Board  
7 raised issues with the loss of key individuals in  
8 Defense Programs at a time when, and I quote,  
9 "competence is already below level which the Board  
10 believes to be necessary for continued safety."

11                   The Board further stated, "it appears that  
12 the Department needs to take an aggressive approach to  
13 supplement the Defense Program organization with  
14 additional technically competent personnel."

15                   In this testimony I will review the  
16 actions that the Board has taken to try to insure  
17 adequate expertise resides in three organizations  
18 within DP: the Headquarters organization, itself, the  
19 Amarillo Area Office, a branch of DOE's Albuquerque  
20 field office that oversees dismantlement of nuclear  
21 weapons, the Y-12 Site Office, a branch of the Oak  
22 Ridge Operations Office that oversees operations

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1 involving highly enriched uranium. I'll cover these  
2 topics in that order.

3 As part of the 93-6 implementation plan  
4 provided to the Board in July of 1994, DOE committed  
5 to an immediate study to determine the effects of loss  
6 of personnel in DP's capabilities. They stated that  
7 the Department shared the Board's concern for loss of  
8 capability within Defense Programs and will conduct an  
9 immediate review to determine the effects of that  
10 loss. They also committed to take an aggressive  
11 approach to supplement Defense Programs' organization.

12 On September 14th, the Board rejected  
13 several deliverables under Recommendation 93-6,  
14 including an initial draft of information for the DP  
15 staffing study. The Board stated, "the deliverable  
16 does not address either of the explicit requirements  
17 of the DOE commitment." By the end of October 1994,  
18 an adequate staffing study for Defense Programs still  
19 had not been completed. Therefore, during a November  
20 9, 1994, meeting with the Secretary of Energy, the  
21 Board addressed the lack of the completed staffing  
22 report. The Secretary committed to completing one

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1 within 60 days.

2 Later that same year, in December, at a  
3 public hearing before the Board, the Secretary of  
4 Energy commented on some of the actions that she had  
5 taken regarding the DP staffing. She stated, "I held  
6 back slots that are owed to OMB so that we might have  
7 enough play in our system to continue along this track  
8 of hiring people who have technical qualifications  
9 that you have pointed out to us." The "you" is the  
10 Board.

11 Dr. Vic Reis, the Assistant Secretary for  
12 Defense Programs followed this up by stating that the  
13 Secretary had already allotted Defense Programs ten  
14 slots immediately to upgrade their expertise. They  
15 had a total of 56 positions that were available.

16 He also recommitted the Defense Programs  
17 organization to what he referred to as "a real bottoms  
18 up, high urgency look at making sure that we get the  
19 right people, the right billets and the right skill  
20 mix."

21 Subsequently, Mr. Vic Stello was assigned  
22 lead in performing that study. Every organizational

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1 and programmatic element' within Defense Programs  
2 participated, along with representatives from the  
3 Office of Field Management and the Office of Human  
4 Resources within the Department. At your direction,  
5 Mr. Chairman, the Board staff also participated in  
6 this study.

7 On January 30th of 1995, Undersecretary  
8 Curtis signed out an interim status report. In that  
9 letter he confirmed DOE's commitment to correct a  
10 broad range of defense nuclear facilities safety  
11 related staffing deficiencies. He went on to say that  
12 DP was moving out quickly to find safety specialist  
13 positions and utilize the additional hiring authority  
14 that had been provided by the Secretary.

15 In March of 1995, a final draft of the  
16 proposed Defense Programs staffing plan was completed,  
17 briefed to Dr. Reis and also briefed to the Board.  
18 That draft plan stated the following: "Thirty to 40  
19 additional FTEs -- that's full-time equivalent  
20 personnel -- were required in safety-related positions  
21 in addition to the ten already approved by the  
22 Secretary." The personnel needed to be distributed

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1 between nuclear facilities safety and nuclear  
2 explosives safety positions, both in Headquarters and  
3 in the field.

4 The basis for these resource requirements  
5 were discussed under those two separate categories,  
6 nuclear facilities safety and nuclear explosives  
7 safety. I have a detailed quote from the DP staffing  
8 study. In my testimony I will just highlight portions  
9 of it.

10 Under nuclear facilities safety it said  
11 "two major areas of deficient performance exist, the  
12 slow pace of safety analysis report upgrades and the  
13 indifferent quality of the documents that had been  
14 developed to date under that program." The second  
15 problem was on-going deficiencies encountered in  
16 implementing and maintaining nuclear safety limits  
17 such as operational safety requirements, technical  
18 safety requirements and other administrative limits in  
19 nuclear facilities.

20 Concerning nuclear explosives and weapon  
21 safety programs, it said that since DOE is currently  
22 moving from an expert based system of insuring nuclear

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1 explosives safety to a much more formal and documented  
2 standards based system, extensive effort would be  
3 required. Adding to this was the loss by early  
4 retirement of many of the most experienced DOE  
5 personnel in the field, the need for improved Nuclear  
6 Explosive Safety Study Technical input documentation.  
7 The requirement for more rigorous selection  
8 qualification training and certification of Nuclear  
9 Explosives Safety Study Group members and the need to  
10 improve compliance with a relatively new requirement  
11 to perform risk assessments as part of the nuclear  
12 explosives safety program.

13 At a subsequent meeting with the Secretary  
14 of Energy on May 11, 1995, the Board inquired as to  
15 the status of actually hiring personnel to fill these  
16 billets in Defense Programs and I'll show a graph  
17 later on that shows what the status was at that time,  
18 but only one person had been hired.

19 The Board, which was also in receipt of a  
20 draft of the Secretary's strategic alignment report  
21 noted that the strategic alignment study group,  
22 recommendations for the DP organization appear to run

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1 completely counter to those in the DP staffing plan  
2 and the Board wondered whether this conflict could be  
3 impacting the pace of hiring within Defense Programs.

4 In a July 1995 letter forwarding the DP  
5 staffing study, it was noted that a total of 11  
6 positions had been authorized within defense program  
7 headquarters and five had been filled.

8 CHAIRMAN CONWAY: These were new  
9 positions?

10 MR. KRAHN: These were new positions,  
11 correct. I will present shortly a graph that shows  
12 the total status over this time period.

13 In fact, why don't we put that up now,  
14 Wayne?

15 What this graph shows is, if you go back  
16 to May of 1994 when the Board originally wrote to the  
17 Secretary of this Department on this problem and  
18 tracked forward to today or actually December of '95,  
19 you can see that it took from May to February of 1995  
20 for the very first person to be hired and that to date  
21 only a total of 12 people have been hired within  
22 Defense Programs and only 11 of those are nuclear

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1 safety professionals. If you compare that to the  
2 level which would be anticipated, if the DP staffing  
3 study were being implemented, you see that it falls  
4 well short of what that technical study said was  
5 required for Defense Programs.

6 It should be noted, however, that this  
7 augmentation in staff has occurred in an environment  
8 where DOE activities, especially those at  
9 Headquarters, are being required to downsize.

10 In addition, over all, the personnel  
11 selected, I would like to point out, have been fairly  
12 solid technically, and on an operational basis.  
13 However, the 11 positions added to date are less than  
14 half of the positions that DP's own staffing study  
15 stated were required in headquarters due to urgent  
16 safety-related deficiencies.

17 Such a lack of progress, almost a year  
18 after having completed the DP staffing study and 20  
19 months after the Board originally identified the  
20 problem is discouraging and could well call into  
21 question the resolve of senior Defense Program  
22 managers to solve the identified personnel problem in

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1 headquarters.

2 CHAIRMAN CONWAY: Has the DP staffing  
3 study been accepted by anyone with authority within  
4 DOE and if so, who?

5 There's a DP study, staffing study. Now  
6 the Assistant Secretary for Defense Programs, did that  
7 individual accept this staffing study?

8 MR. KRAHN: It's difficult for me to  
9 determine how to answer that question. I will say  
10 that the study was signed out by Dr. Beckner who is  
11 the principal Deputy Assistant Secretary for Defense  
12 Programs, as meeting the intent of the requirement.  
13 It's important that the requirement is in the  
14 implementation plan.

15 CHAIRMAN CONWAY: Who does he send that  
16 out to? He signed off on it and to whom did he send  
17 it?

18 MR. KRAHN: Well, I know he sent it to the  
19 Board because it's --

20 CHAIRMAN CONWAY: I mean within DOE. I'm  
21 trying to find out which DOE. We see a lot of studies  
22 being done that are put on the shelf and nobody pays

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1 any attention --

2 CAPT. CRAWFORD: Mr. Chairman, if I could  
3 comment? Directly -- you raise an excellent question.  
4 The document that came over here, signed by Dr.  
5 Beckner in -- was it November?

6 MR. KRAHN: The formal copy came over in  
7 November of 1995, yes sir.

8 CAPT. CRAWFORD: I had attached to it the  
9 staffing study, but if my memory serves me, the  
10 document was labeled, it was the final document of  
11 proposal. In no way could I put an interpretation on  
12 it. That it was a document that had been adopted by  
13 the appropriate authorities in DOE and gave evidence  
14 that they were going to keep, carry it out.

15 CHAIRMAN CONWAY: By whom?

16 CAPT. CRAWFORD: I don't know.

17 CHAIRMAN CONWAY: But what I've gotten out  
18 is that the Deputy, the Principal Deputy signed it and  
19 sent it over to us.

20 CAPT. CRAWFORD: Labeled "proposal."

21 CHAIRMAN CONWAY: Labeled as a proposal,  
22 but who does he make the proposal to? He presumably

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1 makes a proposal to the Assistant Secretary for DP  
2 who, in turn, I presume, would, if he endorses it,  
3 then sends it up to higher authority. So I guess I'm  
4 trying to find at what level did this staffing study  
5 go with an imprimatur, that we agree with it.

6 MR. KRAHN: Let me provide a couple of  
7 pieces of information. I don't know that it fully  
8 answers your question. I would suggest that the  
9 appropriate question to ask the Department of Energy  
10 when they come over and discuss it with you.

11 The study was provided to the Department  
12 of Human Resources since they were a participant in  
13 the DP staffing evaluation. The study has been  
14 briefed to the Assistant Secretary, Dr. Reis.

15 It's important to remember that one of the  
16 bases of the study was that the review group was  
17 required to look at the staffing requirements for  
18 Defense Programs absent, and I would note again,  
19 absent budgetary constraints. It was to be a  
20 technical review which showed that what additional  
21 technical competencies were required both in  
22 headquarters and the field to address known

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1 deficiencies in safety-related performance.

2 But I think it is still a very valid  
3 question for the Board to ask representatives of the  
4 Department of Energy what indeed had been done to  
5 execute it. As you can see from the graph, only 11  
6 safety-related people have been hired and that's only  
7 one more than the ten that the Board was aware well  
8 over a year ago had already been provided to them to  
9 fill just as they saw fit.

10 Okay, if I could go on, I note that in the  
11 details of my testimony for the Board's information  
12 are a summary of each of the 11 safety-related people  
13 who have been hired in Defense Programs Headquarters,  
14 when they actually reported, and a short summary of  
15 their technical competencies and capabilities. That  
16 will be true for each of the other case studies that  
17 I walk through.

18 CHAIRMAN CONWAY: Okay, let me clarify  
19 something also. If I heard you correctly, these ten  
20 or eleven hires, new hires, you found them to be  
21 technically competent individuals for the jobs they  
22 were hired for?.

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1           MR. KRAHN: I note that the 11 technical  
2 hires possessed an average of about 22 years of  
3 related experience, nuclear safety related or good  
4 operational related experience. In sum, have 20  
5 technical degrees including four masters degrees and  
6 one Ph.D.

7           CHAIRMAN CONWAY: So we don't have a bell  
8 curve in this situation?

9           MR. KRAHN: I didn't do a histogram, but  
10 I don't think we would have a bell curve in this  
11 situation. I could delegate that to Mr. Dwyer.

12           Turning to the Amarillo Area Office, or  
13 AAO for short, the record is somewhat more  
14 encouraging. The Board wrote the Secretary of Energy  
15 specifically on problems with the Amarillo Area Office  
16 and stated "the AAO staffing situation has resulted in  
17 delays in implementing nuclear safety requirements as  
18 well as a general inability to insure that the  
19 contractor's readiness to proceed with new activities.  
20 The current pace of dismantlement activity, coupled  
21 with necessary tension to nuclear facility safety  
22 requirements is exceeding the capability of the

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1 current AAO staff."

2 In September of 1994, the Secretary of  
3 Energy replied, stating in part, "We have taken  
4 aggressive action to fill key safety-related  
5 positions, to fill vacant facility rep positions.  
6 We're now conducting" -- and I quote -- "a nation-wide  
7 search for qualified candidates. "Both federal and  
8 nonfederal individuals may apply for those positions.  
9 Advertising in nuclear industry trade journals should  
10 encourage a large group of applicants."

11 Now before I go on, I have to note, in  
12 fact, however, none of the positions was ever  
13 advertised in the manner that the Secretary outlined  
14 to the Board.

15 The AAO staffing issue was also addressed  
16 by the Board at a public meeting in Amarillo, Texas in  
17 October of 1994. In April of 1995, a Board Member and  
18 the staff were briefed by the AAO manager on the  
19 progress being made at hiring technical personnel.  
20 Throughout that time period, one of the DNFSB site  
21 reps consistently pursued this issue with upper level  
22 management at Amarillo.

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1 I would have to note though that even  
2 without a national advertising campaign, acceptable  
3 candidates were still found to fill the empty  
4 positions and several of the personnel recruited have  
5 been excellent.

6 However, one is left to wonder what could  
7 have been accomplished if a truly national search for  
8 talent had been accomplished. To go on, when one  
9 compares where AAO was in -- do you want to put the  
10 chart up, please, Wayne -- in 1993, prior to the Board  
11 taking its actions, to where it finished, 1995,  
12 significant improvement in technical competence can be  
13 seen.

14 I would note with little increase in  
15 overall staffing, the number of technical positions  
16 has increased by over 40 percent with a similar  
17 increase in the number of technical degrees possessed  
18 by personnel in the Amarillo Area Office, with only,  
19 if I have done the math correctly, about 10 percent,  
20 maybe 11 percent increase in overall staffing.

21 However, the true measure of the impact of  
22 the enhanced technical competence of the Amarillo

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1 staff has been improvements in the operation at Pantex  
2 as observed by the Board staff during recent reviews.

3 It should also be noted that constant  
4 interaction by the Board in its staff has played a  
5 measurable role in achievement of the current  
6 technical level at this area office. AAO still has  
7 several technical positions to fill and is expected to  
8 have several more become vacant due to planned  
9 retirements. Unfortunately, the effects of the  
10 Board's influence can often diminish over time and I  
11 believe it is most likely to require continued Board  
12 exertions to insure that the upward trend at Amarillo  
13 is maintained.

14 CAPT. CRAWFORD: Let me stop you there.  
15 You say it's going to require continued Board exertion  
16 to insure that this is done. Why should it? Haven't  
17 we put enough effort? Haven't we made enough noise?  
18 Haven't we applied enough in the way of our resources.  
19 so that DOE, it can be expected to take the initiative  
20 from here and carry through this, Mr. Krahn?

21 MR. KRAHN: Well, first, I certainly don't  
22 want to characterize the Board's staff actions to date

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1 as being inadequate. They have been both thorough and  
2 very comprehensive.

3 CAPT. CRAWFORD: What I'm looking for is  
4 an indication from you that you see a change in  
5 attitude in DP so that the Board will not have to do  
6 it. We will, but so that it isn't necessary,  
7 incumbent upon us to do it.

8 MR. KRAHN: I'd like to defer the  
9 discussion of Defense Programs until my conclusion,  
10 because I have a conclusion on that subject.

11 CAPT. CRAWFORD: All right.

12 MR. KRAHN: But I would also note --

13 DR. EGGENBERGER: Mr. Krahn, is there a  
14 problem with retention at Amarillo?

15 MR. KRAHN: There is a problem that one of  
16 the senior nuclear safety personnel will soon be  
17 leaving for a job at Los Alamos. But other than that,  
18 I don't know of any extensive retention problem.

19 DR. EGGENBERGER: Thank you.

20 CHAIRMAN CONWAY: But he's still in the  
21 loop?

22 MR. KRAHN: Yes, but I would note that

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1 this kind of provides a transition as to what is going  
2 to be a systemic problem in filling these billets and  
3 that is that with the way that the administrative  
4 groups within the Department of Energy have  
5 implemented the draw-down of personnel within the  
6 Department. It is extremely difficult from an  
7 administrative standpoint, to go outside of a given  
8 organization to try to fill billets that have become  
9 open. That is going to be a very significant channel  
10 to the Board and its staff to continue to highly  
11 priority billets as they become available to this  
12 method and encourage places like the Albuquerque Field  
13 Office and the Oak Ridge Field Office to go outside to  
14 fill these critical nuclear safety positions.

15 I was going to hit it a little bit later,  
16 but since it's responsive to your question, there are  
17 a couple of examples that I'd like to just bring up  
18 because this personnel issue is not just about  
19 numbers, since the Board has said on numerous  
20 occasions, each one of these hiring opportunities is  
21 a unique opportunity to increase the technical  
22 competence of the Department of Energy. I would note

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1 that within Defense Programs Headquarters within the  
2 last few months there have been two unique  
3 opportunities. Dr. Don Knuth retired from Defense  
4 Programs in September of this year. The information  
5 we have is that he has yet to be replaced with a  
6 person of similar stature in the nuclear industry. I  
7 would note that as the Board knows, Dr. Knuth was a  
8 Ph.D. in mechanical engineering and extensive  
9 experience both at the Nuclear Regulatory Commission  
10 and within the Department of Energy.

11 More recently, and in fact, I think it  
12 becomes fully effective at the end of this week, Dr.  
13 Everett Beckner, the Principal Deputy will be leaving  
14 the Department of Energy to return to the private  
15 sector. These represent two enormous opportunities  
16 for the Department of Energy to augment or at least,  
17 for heaven's sake, maintain their level of technical  
18 expertise at Headquarters and I think it would be very  
19 interesting for the Board and the staff to monitor the  
20 actions taken by Defense Programs to replace these  
21 exceptional talents, one in the nuclear facilities  
22 safety area and one in the nuclear weapons --

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1                   CHAIRMAN CONWAY: Steve, we've recently --  
2                   hasn't there been a very competent person brought in  
3                   within the last several months?

4                   MR. KRAHN: Yes, there has been a person  
5                   brought in to take over what's called the DASMA  
6                   position at a lower level in the Defense Programs  
7                   organization, but at these high levels, there has not  
8                   been a person brought in to continue to provide broad  
9                   nuclear safety expertise across the full panoply of  
10                  issues --

11                  CHAIRMAN CONWAY: I guess the point I'm  
12                  making and maybe it isn't clear, if he's been brought  
13                  in at a lower level, my question is is he technically  
14                  competent? Is he technically competent to do this  
15                  kind of work?

16                  MR. KRAHN: I would certainly say that the  
17                  person you're referring to is technically competent to  
18                  perform the job of DASMA. I would reserve comment on  
19                  whether or not the Department of Energy would consider  
20                  promoting him to a higher level.

21                  CHAIRMAN CONWAY: I don't want to get into  
22                  that, that's management's --

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1                   MR. KRAHN: He is certainly highly  
2 competent for the job that the Department brought him  
3 in to fill, but these two Principal Deputy positions  
4 that have become open, in my opinion, very frankly,  
5 remain unfilled at this point.

6                   In addition, at Amarillo, the vacancy that  
7 you've already mentioned will occur within the very  
8 near future. They're losing a senior nuclear safety  
9 specialist, a very highly talented individual, able to  
10 contribute across a broad spectrum of nuclear safety  
11 issues and the efforts that Amarillo goes through to  
12 replace that person are going to be very illuminating  
13 on this subject.

14                   At the Y-12 Site Office, unfortunately, I  
15 believe in the next couple of months, they're going to  
16 lose the manager of that office. And certainly  
17 replacing that billet will be very critical to the on-  
18 going safety upgrades at the Y-12 plant which is  
19 probably a good time to go into my discussion of the  
20 Y-12 plant site efforts.

21                   On September 27, 1994, the Board issued  
22 Recommendation 94-4, Deficiencies and Criticality

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1 Safety at the Y-12 Plant. The subject of technical  
2 competence of federal staffing at YSO was integral to  
3 that recommendation. It stated in part and I quote,  
4 "DOE should evaluate the experience, training and  
5 performance of key DOE and contractor personnel  
6 involved in safety-related activity at defense nuclear  
7 facilities within the Y-12 plant to determine those  
8 personnel have the skills and knowledge required to  
9 execute their nuclear safety responsibilities."

10 The Board reiterated its concerns  
11 regarding technical staffing levels of YSO during a  
12 public meeting held at Oak Ridge in November of 1994.  
13 The response to this Board input was refreshingly  
14 immediate. The manager of Oak Ridge Operations  
15 negotiated with Dr. Reis to receive the ability to  
16 advertise immediate five safety related positions.  
17 The 94-4 implementation plan followed up with detailed  
18 reviews of staffing requirements at YSO. YSO was able  
19 to add eight new technically competent personnel.  
20 These personnel have extensive nuclear backgrounds.

21 Why don't you flip to the chart, Wayne?

22 Have extensive nuclear backgrounds and

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1 technical degrees, clear indications of the type of  
2 personnel who are available if aggressive measures are  
3 taken. In fact, the YSO manager, Mr. Bob Spence noted  
4 that the response to his national advertisements  
5 placed in trade journals was overwhelming and resumes  
6 have been subsequently provided to other field offices  
7 who are trying to fill safety-related positions.

8 Subsequent to these initiatives an  
9 independent training assistance team formed in  
10 accordance with the implementation plan, visited Oak  
11 Ridge. They found that the base level of key federal  
12 personnel expertise and competence at the Y-12 site  
13 has significantly increased since the September 1994  
14 event. It went on to state needed technical expertise  
15 had been added to the YSO office and significant  
16 enhancements were evident.

17 The staff believes that YSO's efforts to  
18 augment their technical expertise are a good example  
19 of what can be accomplished when dedicated management  
20 utilizes all of the tools at its disposal. In the  
21 short space of seven months, YSO, working with the Oak  
22 Ridge field office advertised, screened and selected

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1 eight personnel. Probably the most striking is the  
2 fact that YSO was able to almost double the number of  
3 technical degrees in the office by only adding a net  
4 seven positions. These personnel changes, I believe,  
5 did in the words of the Board's tasking from Congress,  
6 "increased the expertise -- of that office --  
7 substantially."

8 I'd like to move on to my summary. In  
9 summary, where senior DOE managers have made a  
10 personal commitment to increase the technical  
11 capability of their staff, significant progress has  
12 been made. Such commitment has been especially  
13 evident in Mr. Bob Spence at the Y-12 Site Office. It  
14 has been evident to a degree also at the Amarillo  
15 Office. However, the results to date would indicate  
16 that a consistent commitment to such change does not  
17 yet exist within Headquarters at Defense Programs.

18 It is important to also remember that each  
19 one of these inadequacies and technical competence was  
20 identified by the Board in its staff. None were  
21 identified or acted upon by DOE itself without Board  
22 pressure.

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1           The staff believes that this fact, in and  
2 of itself, is also an indication of a technical  
3 competence issue.

4           Finally, would you put up the graph,  
5 please? each of these instances show that personnel  
6 tools available to DOE can be used effectively to  
7 address technical personnel problems. One of the most  
8 quizzical factors is DOE's apparent reluctance to use  
9 widespread advertisement to garner the greatest  
10 possible response to job openings. As Mr. DiNunno  
11 said earlier, to increase the pool of available  
12 applicants.

13           YSO did so and was inundated with high  
14 quality applicants. Amarillo did not and had a much  
15 more difficult time identifying qualified candidates.  
16 As a summary chart, what I've put up here is looking  
17 at the percentage of staff that each, under each of  
18 these three case studies. I would note that what I  
19 have used is a rough estimate of the manning or  
20 personnel at these, in these three organizations over  
21 the time period, '93 to '95. But what you'll see is  
22 Amarillo Area Office and YSO have each been able to

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1 achieve almost a 25 percent increase in technically  
2 competent personnel in their organization, while the  
3 progress in DP headquarters has been somewhat more  
4 modest.

5 CHAIRMAN CONWAY: Let me ask you, the  
6 staff estimates, you have HQ Headquarters, 380. Is  
7 that 380 existing numbers of people or is that the  
8 number of billets they should have?

9 MR. KRAHN: Each of those numbers are  
10 rough averages of the actual number on board, averaged  
11 over the two year time period '93 to '95.

12 CHAIRMAN CONWAY: So you start with  
13 numbers that average during that time period, so if I  
14 take a percentage, I understand taking a percentage,  
15 but I'm down around what, 5 percent increase in HQ --

16 MR. KRAHN: Three percent.

17 CHAIRMAN CONWAY: Three percent of 380 is  
18 what? 9 something?

19 MR. KRAHN: It's 11.

20 CHAIRMAN CONWAY: Okay, I'm with you now.  
21 Okay.

22 MR. KRAHN: Now isn't that the purpose of

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1 this slide to argue that 25 percent is the right  
2 number --

3 CHAIRMAN CONWAY: I understand.

4 MR. KRAHN: At Headquarters. It's the  
5 purpose of this slide to show that there has been, in  
6 two offices that have taken themselves from a  
7 standpoint of not being able to perform their jobs in  
8 nuclear safety properly, they have had to augment  
9 their expertise, what I would call substantially.

10 CHAIRMAN CONWAY: Well, the staffing study  
11 shows what, 40 additional billets required?

12 MR. KRAHN: Of which half were supposed to  
13 be in Headquarters, so that number would indicate for  
14 DP Headquarters a number closer to the 7 or 8 percent  
15 number.

16 And I think that is a -- since I  
17 participated in the study, along with a number of  
18 other DFSNB staff members, I think that that is a  
19 realistic number. That type of expertise needs to be  
20 added.

21 CHAIRMAN CONWAY: Mr. Crawford?

22 CAPT. CRAWFORD: I'd like to make a

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1 comment that comes through to me with unusual clarity  
2 as a result of hearing Mr. Dwyer's presentation and  
3 yours.

4 Mr. Dwyer is talking about acquisition in  
5 1994 of 800 plus people in the EM domain. Okay? I'm  
6 not commenting on whether that number -- but here,  
7 you're commenting on 10s or 20s and the trauma that's  
8 been encountered by those people in getting authority,  
9 if they did experience any trauma. Why are we dealing  
10 with two different orders of magnitude in the ease  
11 with which EM gets positions and the difficulty which  
12 DP would have. Safety hazards of the Defense Programs  
13 seem to merit such stingy treatment. I'm not asking  
14 you the question. If you had any insight, I'd welcome  
15 it, but I do think, Mr. Chairman, that this is a  
16 question that we need to put to DOE when they come  
17 over to testify.

18 MR. KRAHN: I would like to go back to a  
19 point which I think each of the Board Members has made  
20 as we've gone along. Certainly the Board in its staff  
21 did not normally comment, as you noted, on the numbers  
22 of people required to do this job, but we comment from

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1 time to time on the competence of the organizations to  
2 perform in nuclear safety related functions as  
3 indicated by our reviews.

4 CHAIRMAN CONWAY: In fact, many times with  
5 fewer people who are qualified are much, much better  
6 than having a large number of individuals who are not  
7 competent and that can be a worse situation than  
8 having too many people getting in the way of each  
9 other.

10 MR. KRAHN: Mr. Chairman, that's why I  
11 would go back to the tasking that the Department of  
12 Energy accepted under the Board's Recommendation 93-6  
13 and that was to do an unrestrained review of the  
14 technical competence that they actually believe was  
15 required to be added to the Defense Programs  
16 organization and that was the proposed, as you've  
17 noted, DP staffing study.

18 I think that is certainly a standard that  
19 the Board can hold Defense Programs up to a de minimis  
20 type of standard to bring their technical capability  
21 upwards.

22 CHAIRMAN CONWAY: Any other further

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1 questions with Mr. Krahn?

2 Woody?

3 DR. CUNNINGHAM: Mr. Chairman, this  
4 concludes the prepared statements of the staff. In  
5 summary, we believe the DOE has had the necessary  
6 tools in place for some time to effect significant  
7 improvements in technical competence, but has not  
8 effectively used those tools.

9 Excepted service authority is most  
10 valuable for hiring exceptionally qualified technical  
11 personnel from outside the government for senior  
12 leadership positions. Yet, DOE has made little effort  
13 to achieve that goal.

14 At the lower levels where government  
15 positions are competitive with industry positions, we  
16 found little evidence that DOE was seeking to hire the  
17 most qualified individuals.

18 With regard to education and training to  
19 upgrade existing staff, they found serious  
20 deficiencies in the use of higher education and the  
21 interest in having academic institutions participate  
22 in a program that would provide a real technical base

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1 for improvement.

2 I would also emphasize that there has been  
3 a tendency to confuse education with training within  
4 DOE, to try to use short training programs to upgrade  
5 staff when more extensive educational programs are  
6 needed.

7 Thus, we believe that DOE, if they want  
8 to, can significantly increase the number of  
9 technically competent personnel within the Department.

10 Thank you, Mr. Chairman.

11 CHAIRMAN CONWAY: Okay, thank you. Any  
12 questions? Mr. Crawford?

13 CAPT. CRAWFORD: Yes, Mr. Chairman, with  
14 your permission I'd like to talk from here.

15 CHAIRMAN CONWAY: You may.

16 CAPT. CRAWFORD: First, before going into  
17 the substance of my remarks, I would like to say that  
18 I served previously in the Department of Energy itself  
19 for about 30 years in a total service to the  
20 government of 47 years. The first half of my career  
21 in DOE was spent in Naval Reactors. At one time I was  
22 Deputy Manager in Naval Reactors responsible for

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1 selection, education, training of personnel, both  
2 civilian and military, under Admiral Rickover. I note  
3 that in that organization, the second most important  
4 job, that is, the Deputy Manager, the preponderance of  
5 his activity was selection, training, development, and  
6 indeed, if it were necessary, the ejection of people  
7 from the program.

8           The second half of my career was in  
9 civilian reactor development where I became Principal  
10 Deputy Assistant Secretary for Nuclear Energy and  
11 where again, one of my principal jobs was in its early  
12 phases effecting a transformation in the  
13 qualifications, training and education of people in  
14 the civilian reactor development program.

15           I believe it's essential to recognize that  
16 safety of defense nuclear facilities requires that  
17 there be a sufficient number of technically qualified  
18 personnel in-house to assure public health and safety.  
19 The lack of sufficient numbers of technically  
20 qualified DOE personnel, both at Headquarters and in  
21 the field, is the single most important safety problem  
22 at defense nuclear facilities. However, I want to

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1 reemphasize what has been said here before, that the  
2 emphasis is on qualifications and absolutely not on  
3 numbers.

4 Now, in order to understand, in order to  
5 come up with solutions by which to improve the  
6 situation, I think you have to have some knowledge of  
7 the background, how did we get here? It's to be noted  
8 that the Atomic Energy Commission, which was the  
9 progenitor, in a way, of the Department of Energy, was  
10 born decentralized. Its functions tended to be  
11 divided. Technical functions were mainly left to the  
12 laboratories and contractors. Government functions  
13 were focused mainly on contracting, budget and  
14 administration. And this tradition has tended to  
15 endure.

16 The result is that DOE organizations and  
17 Headquarters and the field did not build up sufficient  
18 resources of technical personnel to exercise the  
19 safety authority delegated to them. This problem was  
20 recognized, came to the fore, really, right after  
21 Three Mile Island. There were a number of independent  
22 studies such as those by the National Research Council

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1 which had been referred to earlier. As a result, in  
2 1987, the Department of Energy established an Advisory  
3 Committee on Nuclear Facility Safety to provide  
4 independent safety oversight within DOE and in 1988,  
5 Congress established the Defense Nuclear Facility  
6 Safety Board to provide external safety oversight.

7 Congress was well aware of the problem as  
8 the record will show and consequently, the Board was  
9 urged to raise the level of technical expertise at DOE  
10 substantially.

11 In order to do it properly, there are  
12 certain principles which govern the relationship  
13 between DOE and the Board and which have to be  
14 recognized. DOE should be able to provide technical  
15 direction and guidance to the degree appropriate to  
16 its safety responsibilities. DOE should be able to  
17 effectively assess the performance of the laboratories  
18 and the contractors in their technical dimensions and  
19 not just in their financial and administrative ones.

20 The DOE should have a self-standing  
21 capability in nuclear safety without dependence or  
22 reliance on the Board. That's essential. The whole

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1 system has to be constructed so the Board can go out  
2 of existence and the DOE can do the job with all  
3 effectiveness without that assistance.

4 In order to achieve these objectives, the  
5 competency of DOE personnel must be at a level  
6 generally commensurate with that of laboratory and  
7 contractor personnel and geared to the degree of  
8 technical difficulty inherent in the technology and  
9 also the potential severity of adverse consequences on  
10 public and worker health and safety that can result  
11 from misuse of technology.

12 Today, you've been given substantial  
13 evidence that a problem still exists. Let me if I may  
14 summarize it. Forceful statements on deficiencies in  
15 technical capability from the Board and from others  
16 outside the Department have not generated a  
17 commensurate degree of concern and attention or action  
18 inside DOE. DOE has been slow or insufficiently  
19 effective in carrying out a set of Board  
20 recommendations that call for actions to remedy DOE  
21 technical personnel problems.

22 DOE has been ineffective in carrying out

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1 the recommendations of a DOE internal staffing study  
2 of Defense Programs. On-site assessments by Board  
3 Members and staff show a lack of technical  
4 qualifications among DOE personnel.

5 DOE managers were ineffective in raising  
6 the level of technical expertise in 1994 and 1995  
7 through the hiring process.

8 DOE has relied on the Board to an  
9 inordinate degree for technical guidance and  
10 assistance. The Board has consistently had to call  
11 safety problems to the attention of the Secretary  
12 which DOE ought to have identified and begun to  
13 correct. I don't think this is too hard. If you study  
14 the history of our recommendations, you will find that  
15 they were preceded by a lot of informal interaction  
16 where, if DOE had a will to do so and had the  
17 competence to do so, would have moved out in  
18 directions that were clearly called for by the  
19 dialogue and moved in the directions that would have  
20 been sufficient in most cases, I believe, to have  
21 avoided the need for a recommendation.

22 DOE demonstrates undue difficulty in

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1 planning and scheduling specific corrective actions.  
2 Let's take the first -- second one, 90-2. The Board  
3 recommendations call for certain actions with respect  
4 to standards. It took, as I recall, and correct me on  
5 the standards if I'm wrong, it took six successive  
6 iterations of that implementation process before an  
7 acceptable implementation plan was developed.

8 MR. ANDERSEN: Which number?

9 CAPT. CRAWFORD: 90-2.

10 MR. ANDERSEN: That's correct.

11 CAPT. CRAWFORD: And before that sixth one  
12 could be developed, we made available the expertise of  
13 Mr. Andersen and Dr. Cunningham to help the Department  
14 of Energy in what was not essentially a difficult  
15 recommendation from a technical or indeed from a  
16 managerial point of view.

17 Furthermore, DOE has frequently had  
18 difficulty carrying out actions on schedule and in an  
19 effective manner.

20 What are the causes of this problem?  
21 There are too many DOE managers who tend not to regard  
22 strong technical education and experience as

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1 essential. There are too many DOE managers who  
2 believe that DOE's safety responsibilities assigned to  
3 them by statute can somehow be made to devolve upon  
4 laboratories and contractors. It cannot be done. Not  
5 just because I say so. If you go back and look at the  
6 study of the NRC [National Research Council] that they  
7 made at a time of problems in production reactors,  
8 this was the key point, that DOE had itself to acquire  
9 the technical and managerial capability in-house so  
10 that they would not be dependent to an inordinate  
11 degree on the contractors and laboratories.

12 Third, there is a lack of understanding  
13 that accidents of disastrous proportions could be  
14 triggered by incidents of seemingly small consequence.  
15 The nuclear power plant accident at Three Mile Island  
16 is certainly an example of this.

17 Fourth, out-placing DOE personnel found to  
18 be deficient in technical qualifications is very  
19 difficult. I think anyone who knows anything about  
20 the government service knows that that is a difficult  
21 problem to handle. Nevertheless, one of the  
22 recommendations of -- large Recommendation 93-3 -- was

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1 that DOE would develop a process by which this  
2 delicate problem would be handled. So far as I have  
3 been able to observe, nothing has been done on that  
4 specific.

5 Furthermore, there's an unwillingness to  
6 look for guidance beyond Defense Program. The best  
7 example that would naturally come to my mind is that  
8 there is a distinct aversion to studying the highly  
9 successful Naval Reactor's program for lessons in  
10 acquiring outstanding staff.

11 Also, there are perceived difficulties of  
12 attracting technical personnel to DOE. I think  
13 "perceived" because they are larger in perception than  
14 they are in reality. You've heard from Mr. Krahn very  
15 concrete cases in which specific sites have decided  
16 they're going to do it. And it can be done. There  
17 are only three ingredients: understanding of the  
18 need, willingness to use high standards and most of  
19 all, will power. The missing ingredient in all of  
20 this, then beginning at the top levels of that agency  
21 is will power, the determination to overcome a  
22 problem.

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1                   Now there are consequences of the failure  
2 to resolve this problem. One is that DOE is unable to  
3 carry out its safety responsibilities with sufficient  
4 effectiveness. For example, DOE has resorted to the  
5 use of the surrogate, a new level of management to  
6 manage DOE contractors at the Rocky Flats plant. They  
7 may have other reasons for doing it, but it seems to  
8 me, transparently clear, that this represents a  
9 recognition that we don't have the horses at Rocky  
10 Flats and they're going to go out and hire them to do  
11 their job.

12                   CHAIRMAN CONWAY: Integrate.

13                   CAPT. CRAWFORD: Integrate is the word.  
14 Second, sound safety management relations are  
15 distorted among laboratories, contractors, DOE  
16 organizations and the Board and I would signify or I  
17 would point to the relationship between DOE and the  
18 Board as being highly important in that regard.

19                   To the extent that DOE relies on the Board  
20 as a way of helping them, it has to be recognized that  
21 that help can become inordinate with time and can, in  
22 the process, obscure the problems that existed at DOE

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1 and perhaps contribute to slowing down the rate at  
2 which they will be solved.

3 There are certain major impediments to  
4 resolving the problem. I think first and foremost is  
5 the lack of understanding, experience and personal  
6 involvement by the upper echelons of DOE management  
7 and I mean the echelon that begins at the Secretary,  
8 goes down to the Undersecretary and on down the line.  
9 But, if the will power is at the top level, well,  
10 there are certain aphorisms to indicate how it can be  
11 communicated on downward.

12 A second is a failure to define safety  
13 responsibilities. There was a major reorganization of  
14 the Department in 1993. Ever since that time, the  
15 Board, by informal measures and by formal ones has  
16 been trying to get, to elicit from DOE, a formal  
17 assignment of responsibilities for safety, especially  
18 between the field offices and Headquarters.

19 A modest start was made about two years  
20 ago in responding to that need, but it's tailed off at  
21 the present time into what I believe is an ineffective  
22 effort. But, if people don't know what their

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1 responsibilities are, it's awfully hard to expect them  
2 to carry them out. It's awfully hard to assign the  
3 technical personnel that are needed to carry them out  
4 so that's a job the Board must insist upon.

5 Finally, not finally, the next to the last  
6 is DOE's perception of observations and  
7 recommendations of the Galvin Report. If you read the  
8 Galvin Report carefully, as all Board members have,  
9 you will know that it acknowledges weakness among  
10 technical person. No question about that -- in DOE.  
11 But it also went on to criticize DOE for  
12 micromanagement and used other pejorative terms that  
13 would have encouraged DOE to back off from technical  
14 and other interactions of the laboratories; and,  
15 believe me, this has been taken by some in DOE as  
16 encouragement to back away from a proper safety  
17 relationship with its contractors and laboratories.

18 Finally, there is a certain specialized  
19 problem as regards the uncertainty of the DOE  
20 involvement within the DOE weapons program.

21 CHAIRMAN CONWAY: DOD.

22 CAPT. CRAWFORD: DOD's involvement within

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1 DOE weapons program. This is a complex issue and I'm  
2 not going to go into it, but I'd like to give you just  
3 two facts that indicate matters of concern to the  
4 Board and we will take our own opportunity to address  
5 the others.

6 The first is with respect to the tenure of  
7 office of the senior military officer in the division,  
8 under the Assistant Secretary for Defense Programs.  
9 The record will show the first five directors, having  
10 that job had a tour length of four years. The last  
11 five directors, and I don't include the present  
12 incumbent, but the last five to have completed the  
13 tour, have had a tour length of two years. Now the  
14 Board Chairman and other Board Members have had a  
15 concern about that and we've had a concern about the  
16 seniority that did attach at one time to the job and  
17 the Chairman and I went to see the Deputy Secretary of  
18 Defense and induced him to take action to raise the  
19 grade level of the job and also to increase the tour  
20 length.

21 We're also concerned about the small  
22 reservoir of qualified military officers from which to

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1 draw talent for designated military assignments in  
2 DOE. We are not, the Board is not responsible for  
3 seeing to it that there is a supply of military  
4 officers for DOE, but we are responsible for seeing to  
5 it that those who are assigned are of requisite  
6 qualifications.

7 Mr. Chairman, I have made a fairly  
8 extensive study of this thing, of this matter, and I  
9 have written a report with significant help from the  
10 staff. I intend to give all the Board Members a copy  
11 of this report and ask for their comments on it.

12 I think that, summarizing, I would like to  
13 say that despite repeated Board efforts to cause DOE  
14 to raise the level of technical expertise, DOE  
15 progress to date has been inadequate. DOE needs a  
16 policy for providing technical direction, guidance and  
17 performance assessment to laboratories and  
18 contractors. DOE must invigorate implementation of  
19 Board Recommendation 93-3 to raise the overall level  
20 of technical expertise. And finally, I believe the  
21 Board should determine what additional measures are  
22 necessary to accomplish the congressional expectation

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1 that's been repeated so frequently here today.

2 That completes my remarks.

3 CHAIRMAN CONWAY: Thank you, Mr. Crawford.

4 DR. EGGENBERGER: I would just like to  
5 say, Jack, that I think that summarizes it almost  
6 perfectly.

7 CAPT. CRAWFORD: Thank you.

8 CHAIRMAN CONWAY: Mr. DiNunno? Okay. Now  
9 as I said at the beginning this is a public meeting  
10 we've held. There will be a record made and copies of  
11 the transcript will be maintained on file here at the  
12 Board's headquarters. Also copies will be made  
13 available to the Department of Energy and as we have  
14 done in the past, under similar circumstances where  
15 we've had the staff make presentations where certain  
16 problems of a matter of safety at DOE exist, we will  
17 give the Department of Energy an opportunity at some  
18 time in the future after the personnel responsibility  
19 for nuclear safety within DOE have had an opportunity  
20 to study the transcript and the other material that's  
21 been made available.

22 With that now we will recess subject to

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1 the call of the chair.

2 (Whereupon, at 11:29 a.m., the meeting was  
3 concluded.)

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CERTIFICATE

This is to certify that the foregoing transcript in the  
matter of:                   Public Meeting

Before:                       Defense Nuclear Facilities Safety Board

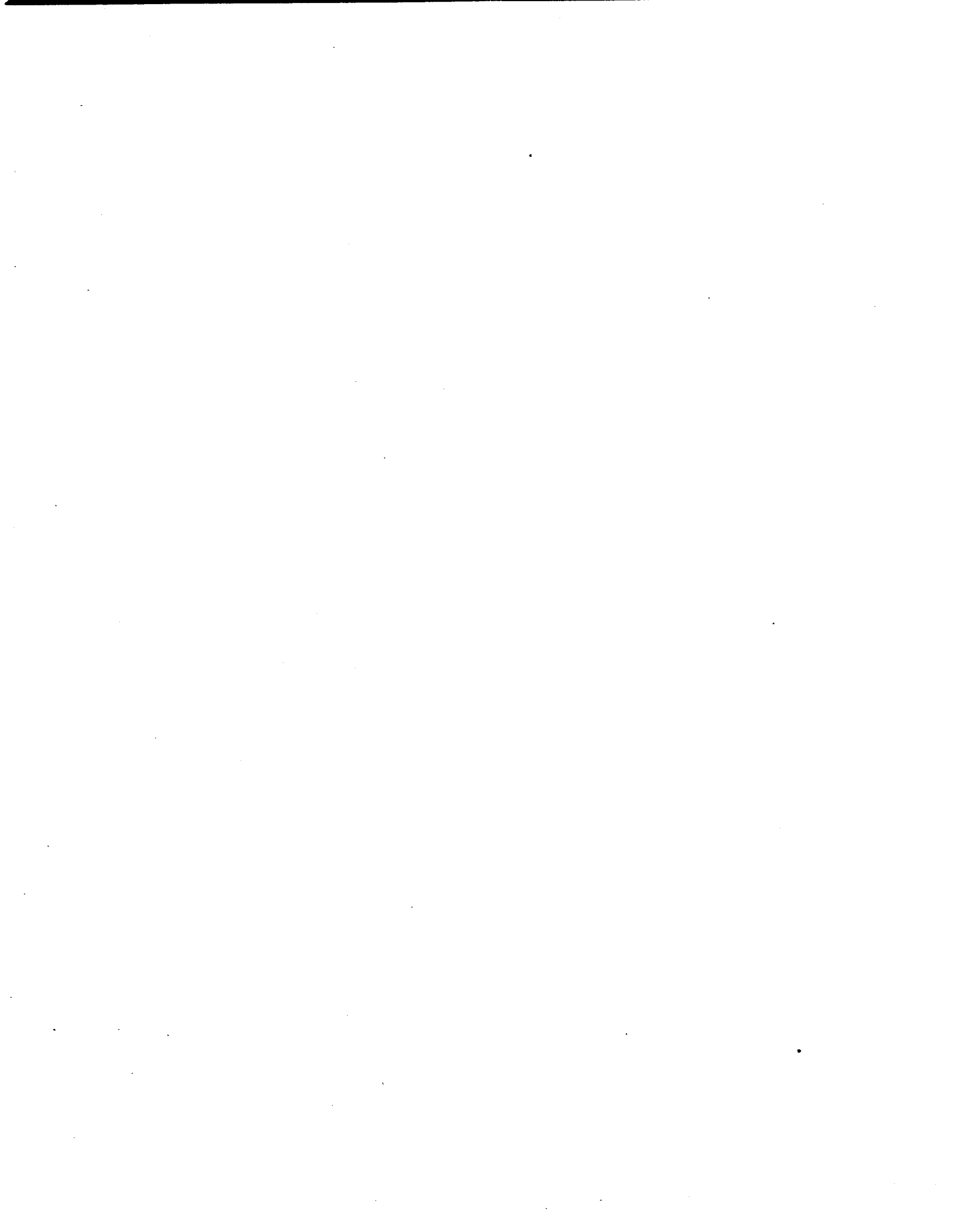
Date:                         January 23, 1996

Place:                        625 Indiana Avenue, N.W.  
                                  Washington, D.C.

represents the full and complete proceedings of the  
aforementioned matter, as reported and reduced to  
typewriting.



Corbett Riner  
Reporter







**STATEMENT OF ROBERT M. ANDERSEN  
GENERAL COUNSEL  
DEFENSE NUCLEAR FACILITIES SAFETY BOARD  
PUBLIC MEETING, JANUARY 23, 1996**

**I. INTRODUCTION**

**A. Congressional and Technical Basis for Board Action on DOE Technical Competence**

The lack of a sufficient number of technically-qualified program and oversight officials underlies all of the health and safety problems at defense nuclear facilities. Recognizing this, Congress, in its report of the Senate Armed Services Committee on S. 1085, stated that the Board is expected to raise the technical expertise of the Department substantially, to assist and monitor the continued development of DOE's internal Environmental Safety and Health organization, and to provide independent advice to the Secretary. Congress expected the Board to raise the level of critical expertise, technical vigor, and a sense of vigilance within the Department at all levels. S. Rep. No. 232, 100th Cong., 1st Sess. 10, 20-21 (1987).

Applicable requirements of the Board's enabling statute implicitly mandate that the Board address the technical competence of DOE's personnel. For example, the Board is required to (1) review the content and implementation of safety standards and (2) investigate events or practices which either adversely affect or have the potential to adversely affect public health or safety. 42 U.S.C. § 2286a. To be effective, these Board reviews must consider the technical competence of those who develop and implement safety standards and procedures and direct operations at DOE sites. The Board must then make recommendations it deems necessary to adequately protect public health and safety to the Secretary of Energy, or in appropriate cases to the President of the United States.

In each of its five annual reports, the Board recognized that the most important and far-reaching problem affecting the safety of DOE defense nuclear facilities is the difficulty in attracting and retaining personnel who are technically qualified to provide the management, direction, and guidance essential for safe operation of DOE defense nuclear facilities. In my opinion, it remains the most critical problem today.

**B. Importance of Qualified DOE Technical Staff**

The lack of qualified technical personnel hinders DOE in providing fully effective technical direction and management of its contractors. The Board discussed this problem in each of its Annual Reports. A number of earlier independent assessments also noted the same deficiency, including the 1981 post-Three Mile Island DOE review of the safety of its reactors (the Crawford Report) and the 1987 Report of the National Academy of Sciences. The current and former Secretaries of Energy have acknowledged the problem and have committed to solving it.

The Board recognizes DOE's attempts to correct the problem. The Board addressed the qualifications problem in several of its formal recommendations, and frequently communicated its concern on this matter to senior DOE officials over the past five years. Unfortunately, they have not been effective enough, and the problem persists.

The problem is pervasive. Deficiencies exist to varying degrees not only in organizational units in Headquarters but also in the field organizations of DOE. The Board believes that a root cause of this shortcoming in DOE staff qualifications lies in a deep-seated conviction among many senior DOE career managers that program management capabilities, and perhaps only general technical familiarity, are adequate. Those who hold this belief elevate financial management, project scheduling, cost accounting, and other administrative management capabilities above technical competence in assigning people to positions of responsibility for managing technological programs of DOE. As a result, too many individuals without adequate technical qualifications are assigned jobs crucial to the safety of defense nuclear facilities.

Contributing causes include: limited capability of DOE to attract technically competent professionals to nuclear weapons activities and assignments as career choices; the failure to effectively use "excepted service" hiring authority by DOE, particularly for key technical management and direction positions; lack of an aggressive recruitment and retention policy for technical career personnel within DOE; insufficient attention by internal monitoring elements of DOE to this problem as a contributor to off-normal events; and the lack of an effective program for interchange of technical staff between Headquarters and field organizations within DOE.

The Board recognizes that it is much easier to identify this problem than to correct it. The Board also recognizes that some senior DOE technical managers are indeed very well qualified and that those managers usually share the Board's frustration in coping with the problem. Until that problem is solved, DOE will continue to have difficulty in developing and applying nuclear safety standards, in assessing the performance of contractors, and otherwise carrying out its responsibilities for assuring safe operation of facilities.

#### C. History of Board Involvement in Enhancing DOE Technical Capability

Since its inception, the Defense Nuclear Facilities Safety Board has emphasized that a well-constructed and documented program for training and qualifying personnel and supervisors for operations, maintenance, oversight, and technical support is an essential foundation of operations and maintenance and, hence, the safety and health of the public, including the facility workers. A substantial portion of the Board's efforts has been devoted to on-site observation and review of personnel and supervisor selection, training, qualification, certification and facility operation.

Despite the long-standing requirements of DOE Orders, neither DOE nor the contractors have provided sufficient management attention and resources for training and qualification commensurate with the health and safety implications of their defense nuclear programs. Each of the sites evaluated by the Board has exhibited weaknesses in contractor training programs that have potential negative safety consequences.

The Board's first Recommendation, 90-1, issued in February, 1990, called for the development of an effective training program at Savannah River Site K-Reactor. Despite the successful application of Recommendation 90-1 to K-Reactor, and application of its principles to the Replacement Tritium Facility, DOE did not follow up with improved training of corresponding technical personnel at some other Savannah River Site defense nuclear facilities. Also, the Department has been slow to extend the underlying principles of Board Recommendation 90-1 to other defense nuclear sites.

On the basis of assessments conducted by the Board's staff at the Hanford Site, the Pantex Plant, the Savannah River Site non-reactor facilities, the Oak Ridge Y-12 Plant, and the Rocky Flats Environmental Technology Site, and, to a lesser extent, reviews conducted elsewhere in the defense nuclear facilities complex, the Board determined that DOE needed to take action to further strengthen training of technical personnel at defense nuclear facilities. Therefore, the Board, on September 22, 1992, recommended that several strong actions be taken to improve qualification and training at these specific sites. The Secretary responded and accepted the Recommendation on January 21, 1993. DOE's initial Implementation Plan, submitted in June 1993, was determined by the Board to be unacceptable as a means for achieving the needed improvements.

DOE did not correct the deficiencies in this Implementation Plan until the initiatives of Recommendation 92-7 were embraced by an even broader-based Board proposal (Recommendation 93-3) for improving recruitment, retention, education, and training of DOE's technical personnel. Previous annual reports have emphasized the importance of attracting and retaining technically-educated and experienced personnel to provide the management, direction, and guidance essential to safe operation of the defense nuclear facilities.

Unlike other federal agencies which rely upon technical competency, such as the Nuclear Regulatory Commission, the National Science Foundation, and the Board, DOE has not made effective use of excepted appointment authority. DOE has been seriously encumbered by antiquated civil service restrictions that discourage bright, technically-qualified persons from being initially hired and subsequently promoted to positions of responsibility.

Recommendation 93-3 urged DOE to take dramatic action to attract and retain scientific and technical personnel of exceptional qualities. The Recommendation addressed concerns of the Board regarding the technical capabilities of personnel within the Department, both at Headquarters and in the field. Among the steps the Board urged were the following DOE initiatives:

1. Establish the attraction and retention of scientific and technical personnel of exceptional qualities as a primary agency-wide goal.
2. Take the following specific actions promptly in the interest of achieving this goal.
  - a. Seek excepted appointment authority for a selected number of key positions for engineering and scientific personnel in DOE programmatic offices, in other line units, and in the oversight units responsible for the defense nuclear complex.

- b. Establish a technical personnel manager within the Office of the Secretary to coordinate recruitment, classification, training, and qualification programs for technical personnel in defense nuclear facilities programs.
3. Develop a broadly-based program, giving consideration to the following:
- a. DOE Internal Initiatives
    - (1) Develop a set of mutually-supportive actions which DOE could take, within existing personnel structures, to enhance capabilities. Measures that could be considered include:
      - (a) Plan and execute a system for using attrition to build technical capability.
      - (b) Review the performance appraisal system for technical employees for its effectiveness in determining basic pay, training needs, promotions, reductions in grade, and reassignment/removal.
      - (c) Review and improve programs for training and assignment of technical personnel. (This activity would be coordinated with actions taken, planned to be taken, in response to Board Recommendations 90-1, 91-6, 92-2, and 92-7.)
      - (d) Explore with the Secretary of Defense the possibility of assigning to DOE defense nuclear facilities activities a number of outstanding officers with nuclear qualifications who may now be surplus to DOD needs.
      - (e) Establish initiatives designed to take advantage of skills of marginal technical performers and retrain them.
      - (f) Expand Headquarters/Field personnel exchange programs for highly-qualified junior technical staff to promote understanding of all aspects of technical issues including their resolution.
  - b. Independent External Assessments
    - (1) Use respected, independent, external organizations such as the National Research Council of the National Academy of Sciences, and the National Academy of Public Administration to assess DOE's ongoing and planned actions directed at attracting and retaining personnel with strong technical capabilities and to make recommendations for enhancements. Such assessment could include:

- (a) Government-wide and/or DOE personnel recruitment and development policies and practices that may be effective inducements to government service.
  - (b) Comparison of DOE methods of building a qualified technical staff with qualifications comparable to those of other government agencies with predominant technical missions.
- c. DOE Internal Assessments
- (1) Perform an in-depth assessment of educational and experience requirements of key positions and develop both a short-term and long-term plan for key personnel development. Such assessment could include:
    - (a) Identification and qualifications (education and experience) required in key positions (above GS-14) in DOE Headquarters and field organizations with responsibilities for safely carrying out the defense nuclear program.
    - (b) Evaluation of incumbents for their ability to meet such qualification requirements.
    - (c) Evaluation of current availability within DOE of fully qualified personnel to fill these positions.
  - (2) Develop an action plan to meet needs thus identified.

The 93-3 approach conceptually contained several key elements: (1) engaging high level DOE involvement in correcting the problem; (2) hiring individuals from outside DOE to raise technical capability; (3) establishing technical qualification standards for key DOE technical personnel, assessing incumbent knowledge, skills, and abilities against those standards, and then raising incumbent capability by effective training and education; (4) using objective internal and external reviews of DOE programs to identify improvements in recruiting, retaining, and educating qualified technical personnel; and (5) implementing corrective action plans using every personnel management tool available.

To address several overlapping elements of Recommendation 92-7, which covered qualification and training of technical personnel, and Recommendation 93-3, the Secretary proposed, and the Board accepted, that a single Implementation Plan be developed for these two important interrelated Recommendations. After extensive joint effort by the DOE and Board task groups, DOE submitted a comprehensive combined Implementation Plan that was accepted by the Board on November 5, 1993.

Some of the actions recommended by the Board in Recommendation 93-3 were completed before the close of 1993. Both of the previous two Secretaries of Energy have formally committed themselves, and the highest level of DOE management, to achieving a fully-qualified technical staff. A senior and broadly experienced DOE technical management expert was named to coordinate all of the technical personnel initiatives and to manage implementation of the plan. The Secretary issued a policy statement emphasizing the important link between technical competence and safety at defense nuclear facilities. Unfortunately, DOE did not move expeditiously enough to request Congressional authorization for excepted service appointment authority for key personnel during 1993. As will be discussed in detail later, DOE subsequently obtained excepted appointment authority. The Department has also recruited two classes of outstanding individuals for its technical intern program.

In the two most critical areas however, recruiting and hiring qualified individuals, and closing the gap between technical requirements and incumbents current abilities, progress has been slow and frustrating. For example, during the recent Board oversight of DOE's revision of nuclear safety Orders and rules, it was abundantly clear to myself, Dr. Ettliger and other staff that DOE's standards effort suffered from an insufficient number of qualified technical experts in decision-making positions. Other members of the staff will provide the details of why we reached these conclusions.

## II. FOCUS ON DOE EFFORTS PURSUANT TO EXCEPTED APPOINTMENT AUTHORITY

In Recommendation 93-3, the Board asked the Department of Energy to seek excepted appointment authority from Congress for a selected number of key positions for engineering and scientific personnel responsible for the defense nuclear complex. Congress subsequently provided such authority to DOE in Section 3161 of the National Defense Authorization Act for 1995. Section 3161, codified at 42 U.S.C. § 7231 Note, authorizes the Secretary of Energy to appoint up to 200 scientific, engineering and technical personnel to positions relating to safety at defense nuclear facilities. The rates of pay for the positions are not to exceed the rate of pay for Level IV of the Executive Service.

### A. Definition of Excepted Service

To avoid confusion, I think it is important to begin with the definition of what excepted service is. Simply put, excepted service is appointment of professional staff to positions within the federal government without regard to civil service laws and restrictions regarding advertisement, appointment, hiring, and pay contained in Title 5 of the United States Code.

Long ago it was determined that the rigid pay, hiring, and classification requirements contained in the civil service laws were not well-suited to hiring and retaining certain professional employees. The federal government found it difficult to recruit individuals such as scientists, medical doctors, lawyers, engineers, and other professionals because of the rigidity contained in the civil service laws. Therefore, many of the agencies whose work is dependent upon

highly-qualified professional and technical talent were given excepted appointment authority. Those agencies include the National Aeronautics and Space Administration (NASA), the National Science Foundation (NSF), and the National Institutes of Health (NIH), and the Nuclear Regulatory Commission (NRC), among others, which Congress authorized to hire, pay, and manage such individuals without following the procedures contained in the civil service laws. This flexibility allowed those agencies to attract high-quality technical talent. This is very evident in the quality of the technical staff the Board has been able to attract using its own excepted service authority.

#### B. Scope of DOE's Excepted Appointment Authority

Obtaining this legislative change for DOE took many months and the combined efforts of the Board and some within DOE. Even though DOE accepted the recommendation to seek excepted service for technical and managerial personnel, some DOE officials were reluctant and slow to initiate action. The Chairman of the Board met with the Secretary of Energy, officials in the Congressional Affairs Office, and the Assistant Secretary of Energy for Human Resources and Administration on numerous occasions to try to jump start the proposal. Mr. Conway used every opportunity to testify before Congress regarding the need for DOE excepted appointment authority and the Board's successful use of its excepted authority in attracting fully capable people to staff positions.

The Board's General Counsel and General Manager slowly overcame opposition to the proposal within DOE, the Office of Management and Budget, and Office of Personnel Management. A draft legislative proposal was prepared and given to DOE.

Prior to enactment of the National Defense Authorization Act for 1995, the Secretary of Energy already had excepted appointment limited authority for scientific, engineering, professional and administrative personnel. Section 621 of the Department of Energy Organization Act, 42 U.S.C. § 7231, states in part:

(d) In addition to the number of positions which may be placed at GS-16, GS-17, and GS-18 under section 5108 of title 5, United States Code, under existing law, or under this Act and to the extent the Secretary deems such action necessary to the discharge of his functions, he may appoint not more than two hundred of the scientific, engineering, professional, and administrative personnel without regard to the civil service laws and may fix the compensation of such personnel not in excess of the maximum rate payable for GS-18 of the General Schedule under section 5332 of title 5, United States Code [5 U.S.C. § 5332 Note].

Section 3161 of the National Defense Authorization Act for 1995 provided additional authority for the Secretary of Energy to appoint scientific, engineering and technical personnel to positions relating to safety at defense nuclear facilities. Section 3161, codified at 42 U.S.C. § 7231 Note, states:

(a) Authority. (1) Notwithstanding any provision of title 5, United States Code, governing appointments in the competitive service and General Schedule classification and pay rates, the Secretary of Energy may --

(A) establish and set the rates of pay for not more than 200 positions in the Department of Energy for scientific, engineering, and technical personnel whose duties will relate to safety at defense nuclear facilities of the Department; and

(B) appoint persons to such positions.

(2) The rate of pay for a position established under paragraph (1) may not exceed the rate of pay payable for level IV of the Executive Schedule under section 5315 of title 5, United States Code.

(3) To the maximum extent practicable, the Secretary shall appoint persons under paragraph (1)(B) to the positions established under paragraph (1)(A) in accordance with the merit systems principles set forth in section 2301 of such title.

\* \* \*

(d) Termination. (1) The authority provided under subsection (a)(1) shall terminate on September 30, 1997.

(2) An employee may not be separated from employment with the Department of Energy or receive a reduction in pay by reason of the termination of authority under paragraph (1).

The plain language of DOE's statute places a single limitation on DOE excepted appointment authority: pay may not exceed level IV of the executive schedule, which is the same cap placed on compensation for members of the Senior Executive Service. The statute does not place any limitation on the use of excepted service for hiring technical managers with scientific and engineering education; in fact its reference to the high pay scale indicates that Congress expected such individuals to be hired. Congress and the Board expected DOE's excepted appointment authority to be used for key technical personnel, including decision-makers and managers.

A comparison of Section 3161 with comparable excepted appointment provisions for NSF, NASA, NRC, NIH, EPA, and the Defense Nuclear Facilities Safety Board also clearly shows that the excepted appointment authority contained in Section 3161 can be used to fill managerial, supervisory, or policy positions in technical areas similar to those in Senior Executive Service or Supergrade positions. See attached excepted service provisions for selected agencies. Section 3161 limits the maximum rate of pay for excepted positions to that of Level IV of the Executive



Service and requires that, to the maximum extent possible, persons shall be appointed in accordance with the merit systems principles of 5 U.S.C. § 2301. The merit systems principles of 5 U.S.C. § 2301 apply to all Federal agencies and include such general principles as recruiting from qualified individuals and not discriminating on the basis of political affiliation, race, religion, national origin, sex, or handicapping condition. The merit systems principles do not address the level of position to be filled. The only limit placed by Section 3161 on the level of the positions to be filled using excepted appointment authority is that the rate of pay for the positions shall not exceed Level IV of the Executive Service, the same as GS-18 of the General Schedule.

Excepted appointment provisions for the Environmental Protection Agency permit appointment without regard to the civil service laws to positions with rates of compensation limited to the maximum rate payable for GS-18 of the General Schedule. 42 U.S.C. § 300j-10. The legislative history for the EPA excepted appointment authority states that the provision provides EPA with additional Supergrade and equivalent positions. 1977 U.S. Code Cong. & Admin. News 3663. Excepted appointment provisions for the Defense Nuclear Facilities Safety Board also limit the rate of pay to that of the maximum rate payable for GS-18. 42 U.S.C. § 2286b(b)(2). The Board has determined that its excepted appointment authority, like that of the EPA, permits qualified scientific and technical personnel to be appointed to Supergrade or managerial positions similar to Senior Executive Service positions. Based on comparisons of DOE's excepted appointment authority under Section 3161 with the excepted appointment authorities of EPA and the Board clearly shows that the DOE authority can be used to fill positions similar to Senior Executive Service positions and that the guidance contained in the November 1, 1994, DOE memorandum is unnecessarily restrictive.

Nevertheless, during a briefing to the Board on October 5, 1995, Mr. Archer Durham (Assistant Secretary for Human Resources and Administration) stated that the excepted appointment authority provided under Section 3161 would not be used to appoint individuals to positions with management responsibility within DOE. Direction provided to the heads of departmental elements concerning excepted service personnel authority in a memorandum dated November 1, 1994, from Mr. Durham states that the excepted appointment authority provided by Section 3161 "shall not be used to make appointments to Senior Executive Service positions."

The legislative history for Section 3161 is clear that it was the intent of DOE and the Congress that the excepted appointment authority provided by Section 3161 apply to scientific, engineering, and technical personnel in management positions as well as such personnel in purely technical positions. Such appointments need not be made directly to Senior Executive Service positions using SES procedures. A comparison of Section 3161 with excepted appointment authority provisions for other agencies also clearly shows that Section 3161 was intended to permit appointments to Supergrade or positions with duties similar to Senior Executive Service positions but with heavy technical or scientific responsibilities. Guidance issued within DOE which does not permit the use of excepted appointment authority under Section 3161 for high level management or positions which perform technical management similar to Senior Executive Service positions is unnecessarily restrictive, and not driven by legal requirements.

In Recommendation 93-3, the Board reiterated its observation of the previous three annual reports that:

the most serious and far-reaching problem affecting the safety of DOE defense nuclear facilities is the difficulty in attracting and retaining personnel who are adequately qualified by technical education and experience to provide the kind of management, direction and guidance essential to safe operation of DOE's defense nuclear facilities. (Emphasis added.)

The Board went on to specifically recommend that DOE seek excepted appointment authority for a selected number of key positions for engineering and scientific personnel in DOE programmatic offices, in other line units, and in the oversight units responsible for the defense nuclear complex. The Board did not recommend that the excepted service authority be limited to non-managerial positions. In fact, given the above statement by the Board, it is clear that the Board intended that excepted appointment authority be used to attract qualified personnel to provide management, direction and guidance for DOE's defense nuclear facilities and that the authority not be limited to non-managerial positions.

The Senate Committee on Armed Services subsequently reported out the National Defense Authorization Act for 1995 with the requested excepted appointment authority. In reporting on what would become Section 3161, the Committee stated the following:

The committee recommends a provision that would amend the Department of Energy Organization Act to allow the Secretary of Energy to hire and employ, without regard to civil service laws, up to 350 [later reduced to 200] scientific, engineering, technical and professional personnel.

The committee has long been concerned that many of the problems at the Department of Energy over the past years have been related to the inadequate number of highly skilled and trained professional engineers, scientists and other technical individuals who can perform oversight and management functions at the Department. (Emphasis added.)

\* \* \*

The provision recommended by the committee expands existing excepted hiring authority to include the addition of 350 [later reduced to 200] more positions. The committee believes that this will be adequate to comply with the recommendation of the Safety Board. S. Rpt. No. 282, 103d Cong., 2d Sess. 278-279 (1994).

It is clear from the legislative history for Section 3161 that DOE and the Congress understood that the excepted appointment authority would be used for scientific, engineering, and technical

personnel who perform management functions as well as such personnel in technical and oversight positions.

Furthermore, in prepared testimony for the Senate Committee on Armed Services, Subcommittee on Nuclear Deterrence, Arms Control and Defense Intelligence, Assistant Secretary Grumbly stated that:

Based on the DNFSB's Recommendation 93-3, we are requesting excepted appointment service authority. This authority would allow the Department greater flexibility to recruit and keep technically trained individuals, and is pivotal to obtaining the technical and managerial expertise needed for this program. (Emphasis added.) S. Hrg. No. 765, Part 7, 103d Cong., 2d Sess. 16 (1994).

### III. DOE PROGRESS IN IMPLEMENTING RECOMMENDATION 93-3

To provide a balanced view, DOE progress in implementing 93-3 must also be noted. DOE made notable progress by eventually obtaining additional excepted appointment authority as recommended by the Board. Section 3163 of the National Defense Authorization Act for Fiscal Year 1995, Pub. L. No. 103-337, authorized DOE to establish up to 200 additional excepted service positions for scientific, engineering, and technical personnel whose duties will relate to safety at defense nuclear facilities. Obtaining this legislative change took many months and combined efforts of the Board and DOE. Appropriate pay levels may be set, and individuals may be hired to fill such positions, without use of the procedural steps which encumber civil service. Excepted service anticipates all of the essential features of the National Performance Review (NPR), is fully consistent with the goals and specific recruitment programs called for in the NPR, and will easily dovetail into the Administration's program if NPR legislation is eventually passed.

DOE designated an excellent Technical Personnel Program Coordinator and recruited an excellent group of technical interns. DOE attempted to improve the Department's ability to recruit and retain technically-competent personnel by issuing an Administrative Flexibilities Handbook, developing new guidance related to career planning, and developing a qualification program for technical personnel. Contractor training and qualification have improved, as shown by more timely approval of the contractor's Training Implementation Matrices and improvements in the training of operators at facilities such as the Savannah River Site Replacement Tritium Facility and at the Pantex Plant. Additional effort is required to extend this success to facilities across the defense nuclear complex.

On the other hand, DOE has made much less progress in actually hiring qualified technical personnel for key Office of Defense Programs (DP) line and oversight positions. The hard-won authority to hire technical personnel under excepted appointments has been little-used to date. Failure to immediately begin using its excepted appointment authority is one of the central obstacles to developing a technically qualified staff at DOE. The Offices of Environmental Management (EM) and Environment, Safety and Health (EH) have recruited and hired technical personnel,

although without full consideration of the goals and standards called for by Recommendation 93-3. Additionally, it is unclear what percentage of the new hires will be devoted to technical positions involved with nuclear safety. At the public hearing on December 6, 1994, the Secretary of Energy and other high-level DOE officials told the Board that additional excepted service positions would be allocated to DP organizations. Few excepted service personnel have been hired to date. DP is challenged to increase the number of well-qualified technical personnel at a time when DP's organization staffing level is being decreased. Current staffing levels, as well as the skill mix of DOE, laboratory and contractor personnel, appear to be inadequate to meet the requirements of the existing defense nuclear safety program. These deficiencies have been highlighted by the Board on several occasions, but have not been corrected. Most notable is the lack of sufficient numbers of trained safety analysis personnel. This contributes to Safety Analysis Reports that are incomplete and unapproved, Nuclear Explosive Safety Studies (NESS) that are out of date and unapproved, and Nuclear Explosive Risk Assessments, initially required in 1990 for every NESS, that are not yet fully implemented.

As part of a broad-based program for improving the qualification of its technical personnel, DOE is now developing and implementing technical qualification standards for DOE employees. However, technical personnel qualification standards that have been developed by DOE and reviewed by the Board and its staff lack the rigor necessary to cause a significant upgrade in the technical competence of DOE. A baseline external review of DOE's technical personnel initiatives has been completed by the National Academy of Public Administration (NAPA). Unfortunately, the review fell far short of the plenary review anticipated by the recommendation since it was restricted to DOE headquarters and did not include field operations.

While preparing the Implementation Plan for Recommendation 93-3, DOE officials stated a preference for curing technical deficiencies by educating and training the existing workforce as opposed to hiring new talent. This preference appears to be even stronger due to mandated personnel reductions, but progress on training and education lags. DOE's education and training efforts reviewed by the Board and its staff, however, are off-target. They are directed towards a superficial level of knowledge rather than a fundamental understanding of nuclear systems and processes. Full implementation of the Board's recommendations to upgrade DOE's level of technical competence is in jeopardy due to a lack of buy-in by DOE line management. In my opinion, the underlying cause for the Department of Energy's failure to fully implement 93-3 is a lack of will to do so at all levels of DOE administration and management.

To maintain the capability to perform criticality experiments as recommended by Recommendation 93-2, DOE has performed a systems analysis to identify the necessary resources and personnel needs. In the limited area of criticality experiments, DOE has (1) identified the resources and funding necessary to support current and anticipated requirements for conducting critical experiments and for training criticality experts and (2) has established the Nuclear Criticality Experiments Steering Committee (NCESC) as a standing committee to oversee and coordinate the DOE criticality experiments program. The NCESC is addressing key issues regarding nuclear criticality experiment capabilities, identifying resource requirements, and justifying necessary funding.

Recommendation 93-6 addresses retention of weapons-related technical expertise, particularly at the national weapons laboratories, in a down-sized weapons complex. DOE prepared the Implementation Plan to complement the Stockpile Stewardship Strategy and the Stockpile Management Plan, which it also was developing. The Implementation Plan provides for a formal Integrated Safety Skills and Knowledge Platform (ISSKP) to identify the skills and knowledge needed to disassemble, modify, and test nuclear weapons. That platform will identify and record needed skills and knowledge. DOE intended to integrate the ISSKP with weapons testing and disassembly procedures, and planned to implement a program to document skills and knowledge by March 1995. DOE also initiated a review of administrative controls and engineered safeguards which ensure nuclear explosive safety at the Nevada Test Site. DOE planned to validate and update weapons disassembly procedures by September 1995. DOE also committed to review the engineered safeguards and administrative controls for the Nevada Test Site and incorporate any necessary changes by February 1995.

By failing to satisfactorily complete many of the near-term initiatives identified in the Recommendation 93-6 Implementation Plan, DOE has placed the overall schedule in jeopardy. However, DOE's ability to capture and preserve expertise as identified in Recommendation 93-6 has been strengthened by the recently-enacted Section 3131 of the National Defense Authorization Act for Fiscal Year 1995. This section authorizes DOE to conduct a stockpile stewardship recruitment and training program at the national laboratories and to establish a "retiree corps" of retired scientists who have expertise in nuclear weapons research and development.

Other problems in the recruitment, retention, and training of personnel persist throughout the Department. DOE has hired few new mid-level or senior-level managers where the initiatives of Recommendation 93-3 can have the most effect. Further, DOE has not considered using the Technical Qualification Standards being developed under this recommendation as an integral part of the hiring process.

## EXCEPTED SERVICE PROVISIONS FOR SELECTED AGENCIES

1. Environmental Protection Agency. The Administrator of the Environmental Protection Agency has limited excepted appointment authority as provided in 42 U.S.C. § 300j-10 which states:

Appointment of scientific, etc. personnel by Administrator of Environmental Protection Agency for implementation of responsibilities; compensation

To the extent that the Administrator of the Environmental Protection Agency deems such action necessary to the discharge of his functions under title XIV of the Public Health Service Act [42 U.S.C. § 300f et seq.] (relating to safe drinking water) and under other provisions of law, he may appoint personnel to fill not more than thirty scientific, engineering, professional, legal, and administrative positions within the Environmental Protection Agency without regard to the civil service laws and may fix compensation of such personnel not in excess of the maximum rate payable for GS-18 of the General Schedule under section 5332 of title 5, United States Code.

2. National Science Foundation. Excepted appointment authority for the National Science Foundation is provided in 42 U.S.C. §1873 which states:

Employment of personnel

(a) Appointment; compensation; application of civil service laws; technical and professional personnel; members of special commissions.

(1) The Director shall, in accordance with such policies as the Board shall from time to time prescribe, appoint and fix the compensation of such personnel as may be necessary to carry out the provisions of this Act. Except as provided in section 4(h), such appointments shall be made and compensation shall be fixed in accordance with the provisions of title 5, United States Code, governing appointments in the competitive service, and the provisions of chapter 51 and subchapter III of chapter 53 of such title [5 U.S.C. § 5101 et seq., 5331 et seq.] relating to classification and General Schedule pay rates: Provided, That the Director may, in accordance with such policies as the Board shall from time to time prescribe, employ such technical and professional personnel and fix their compensation, without regard to such provisions, as he may deem necessary for the discharge of the responsibilities of the Foundation under this Act. The members of the special commissions shall be appointed without regard to the provisions of title 5, United States Code, governing appointments in the competitive service.

3. Nuclear Regulatory Commission. Excepted appointment authority for the Nuclear Regulatory Commission is provided in 42 U.S.C. § 2201 which states:

General Duties of the Commission

In the performance of its functions the Commission is authorized to --

(d) Employment of personnel

Appoint and fix the compensation of such officers and employees as may be necessary to carry out the functions of the Commission. Such officers and employees shall be appointed in accordance with the civil service laws and their compensation fixed in accordance with chapter 51 and subchapter III of chapter 53 of Title 5, except that, to the extent the Commission deems such action necessary to the discharge of its responsibilities, personnel may be employed and their compensation fixed without regard to such laws: Provided, however, That no officer or employee (except such officers and employees whose compensation is fixed by law, and scientific and technical personnel up to a limit of the highest rate of Grade 18 of the General Schedule) whose position would be subject to chapter 51 and subchapter III of chapter 53 of Title 5, if such provisions were applicable to such position, shall be paid a salary at a rate in excess of the rate payable under such provisions for positions of equivalent difficulty or responsibility. Such rates of compensation may be adopted by the Commission as may be authorized by chapter 51 and subchapter III of chapter 53 of Title 5, as of the same date such rates are authorized for positions subject to such provisions. The Commission shall make adequate provision for administrative review of any determination to dismiss any employee;

4. National Aeronautics and Space Administration. Excepted appointment authority for NASA is provided at 42 U.S.C. § 2473 which states:

Functions of the Administration

\* \* \*

(c) In the performance of its functions the Administration is authorized --

\* \* \*

(2) to appoint and fix the compensation of such officers and employees as may be necessary to carry out such functions. Such officers and employees shall be appointed in accordance with the Classification Act of 1949, except that (A) to the extent the Administrator deems such action necessary to the discharge of his responsibilities, he may appoint not more than four hundred and twenty-five of the scientific, engineering, and administrative personnel of the Administration without regard to such laws, and may fix the compensation of such personnel not in excess of the highest rate of grade 18 of the General Schedule of the Classification Act of 1949, as amended, and (B) to the extent the Administrator deems such action necessary to recruit specially qualified scientific and engineering talent, he may establish the entrance grade for scientific and engineering personnel without previous service in the Federal Government at a level up to two grades higher than the grade provided for such personnel under the General Schedule established by the Classification Act of 1949, and fix their compensation accordingly; . . .

**Raising Technical Expertise Within  
Selected DOE Programs in the Defense Nuclear Complex**



**Testimony of:  
Timothy J. Dwyer  
Board Technical Staff**



***Raising Technical Expertise Within  
Selected DOE Programs in the Defense Nuclear Complex***

**Introduction**

Good Morning, Mr. Chairman, Mr. Vice Chairman, Members of the Board, Dr. Cunningham, Mr. Andersen, and Mr. Pusateri. My name is Timothy Dwyer; I am presently a member of the Standards Group of the Board's Technical Staff. The purpose of my testimony today is to provide a summary and evaluation of actions taken over the last two years by the Department of Energy (DOE), to raise technical expertise within selected programs in the defense nuclear complex.

As noted by Mr. Andersen in his presentation, the Senate Conference Report that accompanied the Board's enabling legislation provided specific objectives regarding technical expertise within DOE:

**"... the Department does not possess sufficient technical expertise to adequately evaluate issues independent of its individual contractors."**

**"The Board is expected to raise the technical expertise of the Department substantially.... Above all, the Board should be instrumental in restoring public confidence in DOE's management capabilities...."**

*Reference: S. Conf. Rep. No. 232 (to accompany S. 1085), 100th Cong., 1st Sess. (1987).*

In acting on its responsibilities to meet these objectives, the Board has commented on the adequacy of DOE technical expertise in each of the Annual Reports provided to Congress. The last annual report, published in February 1995, states:

“In each of its first four annual reports, the Board recognized the most important and far-reaching problem affecting the safety of DOE defense nuclear facilities is the difficulty in attracting and retaining personnel who are technically qualified to provide the management, direction, and guidance essential for safe operation of DOE defense nuclear facilities. It remains the most critical problem today.”

The Board's Calendar Year 1995 Annual Report is currently being drafted; we have, at this time, no reason to expect any change in the offered commentary. As will be shown in this testimony, little to no improvement has been noted.

#### **Historical Record of Reports Available to DOE [slide 1]**

In very basic terms, solving any problem requires two things: the problem must be identified, and available tools must be employed to solve the problem. Identification of the technical shortfall within DOE has been accomplished through several mechanisms. The historical record provides reports from several highly regarded, independent bodies, as illustrated on the slide:

- *A Safety Assessment of Department of Energy Nuclear Reactors, DOE/US-0005,*

March 1981

- *Safety Issues at the Defense Production Reactors*, National Academy Press, 1987  
[National Research Council Report]
- *Safety Issues at the DOE Test and Research Reactors*, National Academy Press,  
1988 [National Research Council Report]
- Advisory Committee on Nuclear Facility Safety [The AHEARNE Committee]  
letter to the Secretary of Energy, March 24, 1989
- S. Conf. Rep. No. 232 (to accompany S. 1085), 100th Cong., 1st Sess. (1987)

**Board Recommendations Involving DOE Technical Expertise [slide 2]**

As noted by Mr. Andersen, the Board formally addressed this issue to the attention of the Secretary of Energy in its Recommendations. Of the 33 Recommendations issued to the Secretary to date, the 12 listed here have included direct discussions of the technical expertise of DOE personnel:

- 91-1 Strengthening the Nuclear Safety Standards Program for DOE's Defense Nuclear Facilities
- 91-6 Radiation Protection for Workers and the General Public at DOE Defense Nuclear Facilities
- 92-2 DOE's Facility Representative Program at Defense Nuclear Facilities
- 92-4 Multi-Function Waste Tank Facility at the Hanford Site
- 92-5 Discipline of Operation in a Changing Defense Nuclear Facilities

- 92-6 Operational Readiness Reviews (ORRs)
- 92-7 Training and Qualification
- 93-3 Improving DOE Technical Capability in Defense Nuclear Facilities Programs
- 93-4 Health and Safety Factors Associated with DOE's Management and Direction of Environmental Restoration Management Contracts
- 93-5 Hanford Waste Tanks Characterization Studies
- 94-4 Y-12 Plant Conduct of Operations
- 95-2 Safety Management

The Board has also provided the Department over two dozen letters addressing DOE technical competence, many enclosing trip reports developed by the Board's Staff. Over the past six years, Staff trip reports have focused on reviews of technical issues across the complex, during the course of which the Staff has observed firsthand the failure of DOE personnel to engage the issues at hand due to a lack of technical capabilities. A summary of letters and reports provided over just the last three years includes specific comments on headquarters staffs as well as defense complex sites from Savannah River to Hanford, and Fernald to Pantex. I have provided as an attachment to my testimony a list of these public documents.

The Board and its several members have also conducted numerous individual discussions regarding DOE technical expertise with senior DOE management.

In short, identification of the lack of technical expertise within DOE has occurred through

methods both formal and informal; both highly specific and in broader, more general terms.

### **Summary of Recommendation 93-3 Actions [slide 3]**

Of course, the most formal, direct identification of this problem to DOE, with proposed solutions, occurred through the issuance of Board Recommendation 93-3. The basic elements of this recommendation have been discussed before. For purposes of this presentation, I have broken them down into four categories, as shown. I will be addressing DOE efforts in each of these categories as a means of solving the problem identified.

### **Hiring Tools Available to DOE [slide 4]**

With regard to technical hiring, DOE has had several tools available to correct the noted problems. DOE had 200 excepted service positions authorized under the Department of Energy Act [42 USC § 7231(d)], which were not being used. As stated by Mr. Andersen, excepted service personnel authority provides a proven means by which the civil service, in this case DOE, can attract highly qualified scientific and technical talent.

In 1994, DOE authorized approximately 1200 new billets within the defense nuclear complex. Most of these billets were controlled by the Office of Environmental Management (DOE-EM), for distribution across the Operations and Field Offices at the various sites. Approximately 100 of the new billets were placed under the control of the Office of Environment, Safety and Health (DOE-

EH). This provided another chance to hire a large number of highly qualified technical personnel.

Recommendation 93-3 also advocated increasing the number of excepted service positions available to the Department. As detailed in earlier testimony, personal efforts on the part of the Board and its General Counsel were instrumental in obtaining the authority for 200 additional excepted service positions within DOE. This authority was granted with the passage of the FY 95 Department of Defense Authorization Act in November 1994.

In aggregate, these billets, both the 1200 general schedule and the 400 excepted service positions, represented an unique opportunity to substantially raise the technical expertise of the DOE. Now, I would like to review how DOE has made use of these tools over the last two years.

#### **1994 Excepted Service Hires [slide 5]**

In calendar 1994, DOE did not fill any excepted service positions in the defense nuclear complex. None of the original 200 excepted service positions were used to hire highly qualified scientific or technical personnel.

#### **1995 Excepted Service Hires [slide 6]**

In calendar 1995, DOE filled 33 of the available 400 excepted service positions. They were distributed as shown on the slide:

- 12 DOE-DP
- 3 DOE-EH
- 1 DOE-EM
- 7 Richland Operations Office
- 5 Rocky Flats Field Office
- 5 non-technical or not in the defense nuclear complex

The five (5) non-technical or not in the defense nuclear complex were allocated to the Office of Fossil Energy (DOE-FE), the Office of Science Education and Technical Information (DOE-ET), the Office of Energy Efficiency and Renewable Energy (DOE-EE), the Office of Civilian Radioactive Waste Management (DOE-RW), and the Office of Human Resources (DOE-HR).

**Conclusions: Use of Excepted Service Personnel Authority [slide 7]**

Despite the importance of this program, the total effort after two years has resulted in the effective use of less than ten percent of the available excepted service personnel authority. From this, one can conclude that DOE has not aggressively taken advantage of its authority to recruit the highly qualified scientific and technical individuals needed to “raise the technical expertise of the Department substantially.”

This failure to use excepted service personnel authority can be put into perspective if it is contrasted with the use of such authority by the Board. In constructing its own Technical Staff,

67 excepted service positions have been filled, using an aggressive, organized nation-wide effort to identify candidates, coupled with a comprehensive screening and interview process. Each individual thus hired represents a significant investment of personal time to conduct screenings and interviews, on the part of each Board member. The Staff thus assembled has been characterized by several external review groups as exceptionally technically capable. Over the same time frame in which DOE was not successfully recruiting excepted service personnel, the Board has raised its own technical expertise through judicious use of this tool.

I would like to point out that excepted service personnel authority was not the only tool available to DOE to alleviate the identified shortcoming in technical expertise. While the excepted service positions were envisioned as a means to make the most significant gains in improving technical capabilities in senior management positions, the bulk of the technical positions throughout the defense nuclear complex are filled under general schedule authority. The 1200 positions to be filled during 1994 and 1995 therefore represented a significant portion of the means available to the DOE to raise its technical expertise.

#### **Analysis of DOE General Schedule Technical Personnel Hiring Data [slide 8]**

In early 1995, therefore, the Board Staff requested that DOE provide data that would permit an evaluation of DOE's effectiveness at attracting highly qualified scientific and technical personnel for 1994. It is emphasized that the documentation provided by DOE was the only source material used in this review. No evaluations of personnel performance in the field were conducted, nor



were any interviews, reference checks, or other information gathering techniques employed.

The data provided by DOE to conduct this review consisted of 467 Standard Form 171s (SF-171s) or resumes, and their associated Position Descriptions (PDs), in some cases, augmented by their Vacancy Announcements. Each set represented one individual who had filled a technical DOE billet (either as a new hire, lateral transfer, or promotion) during calendar 1994. This data concerned only technical personnel associated with the DOE defense complex.

The types of billets defined as "technical" included those identified as chemical engineers, civil engineers, electrical engineers, mechanical engineers, nuclear engineers, facility representatives, fire protection specialists, occupational safety specialists, radiological protection specialists, technical program/project managers, etc. The final data set included billets ranging from the GS-5 to the SES levels.

It is significant to note DOE had difficulty collecting and providing this data. Initial DOE figures concerning 1994 hiring have been revised several times by factors of up to nearly 100 percent of the original values reported. Internal discrepancies in the data provided by DOE have continued throughout the first three quarters of 1995.

1994 data initially reported totaled 771 individuals, 291 technical and 480 *non-technical*. DOE later revised these figures to 470 technical, and 505 *non-technical* (975 total). Based on a review of the SF-171/PD data provided, the number of technical billets filled in the DOE defense

complex in 1994 was 445; the fidelity of the DOE figure for non-technical billets (505) is questionable and is most likely valid only as a floor value.

As a side note, based on the data collection difficulty encountered, the Board Staff concludes that no reliable mechanism exists for DOE senior managers to review the efficacy of DOE technical personnel hiring efforts. This lack of feedback is further indication of a failure to manage the process adequately.

The 445 SF-171/PD sets were evaluated to determine the degree to which the SF-171 of each individual hired satisfied the specific Grade Level Requirements, Eligibility Requirements, Ranking Factors, and Duties and Responsibilities of the PD (and Vacancy Announcement, where available) under which the individual was hired. It is important to emphasize the fact that the standard used to evaluate each SF-171 was the same PD used by DOE to determine that the individual in question was the best-qualified candidate for the job.

### **Grading Criteria [slide 9]**

For each SF-171/PD set, a grade was assigned, ranging from one to five. A grade of one signified that, based solely upon the SF-171 data, the individual did not meet the criteria of the associated PD, and accordingly, was not qualified for the assignment. A grade of three signified that the individual satisfied the minimum criteria associated with the PD. A grade of five signified that the individual exceeded most criteria associated with the PD, and appeared to be an excellent match

for the billet described.

### **Qualification of 1994 DOE Technical Hires [slide 10]**

The grading data was collected for all 445 1994 DOE technical hires and is depicted in histogram form as shown. The data approximates a normal (Gaussian) distribution. [The mean is 3.1. The standard deviation is 1.0.] In fact, it is strikingly similar to the smooth curve superimposed on the histogram, which plots the normal distribution obtained for 445 data points with a mean score of 3.0. [The standard deviation (1.1) is fixed such that scores outside the range (of one to five) are limited to approximately one percent of the sample size.] The significance of the similarities between the two plots rests on the fact that the smooth curve represents a hiring process in which the desired outcome is selection of a marginally qualified individual, and in which selection of a highly qualified technical candidate *occurs with no greater frequency than that expected of a random process.*

A more telling comparison can be made by considering how much improvement is required of DOE to *begin* raising the technical expertise of the DOE staff substantially. This would require that DOE not hire any technical personnel who would score below *marginally qualified*. Had this criteria been applied, fully 30 percent [134 of 445] of the 1994 DOE technical hires would not have been selected. Note that, from the 1994 DOE data, less than 10 percent [only 37] of the 445 SF-171/PD pairs were scored as highly qualified technical matches for the position in question.

The observed distribution of qualification scores for individual candidates did not improve even if the analysis was restricted to just the more senior positions (GS-14, GS-15, and SES) filled in 1994.

It should be noted at this point that this data was presented to DOE, in particular to representatives of the Office of Human Resources (DOE-HR), and discussed with the Assistant Secretary for Human Resources in a meeting with the Board on October 5<sup>th</sup>, 1995. DOE personnel indicated that, while there may have been some difficulties in hiring highly qualified technical personnel in 1994, there was no need, nor was there any intention on the part of DOE, to conduct a review or analysis such as the Board Staff had done, since DOE had done a much better job in 1995.

#### **Qualification of 1995 DOE Technical Hires [slide 11]**

An analysis of the data provided by DOE through the first three (3) quarters of 1995 was performed. The data, shown here overlaid on the original 1994 histogram and Gaussian curve, indicate that the 1995 general schedule hiring effort conducted by DOE did not improve relative to 1994. [In fact, a case could be made that the situation has declined. For the 465 data points for 1995, the mean value is 2.8. The standard deviation is 0.9.]

It should be noted that almost half the 1994 and 1995 DOE technical hires were already employees of DOE when they accepted their new position. Over 50 percent of these internal hires

were promotions. [1994: 45% (203 of 445) internal hires; 58% (118 of the 203) involved promotions; 30 percent (136 of 445) transferred from other government agencies; 25 percent (106 of 445) were recruited from outside of government. 1995: 43% internal hires; 67% involved promotions; 22 percent transferred from other government agencies; 35 percent were recruited from outside of government.] At the GS-14, GS-15, and SES levels, the proportion of technical hires drawn from the DOE population rises to more than 80 percent [1994: 127 of 158].

**Conclusions: Use of General Schedule Personnel Authority [slide 12]**

Overall, the Board Staff concludes that DOE general schedule hiring practices did *not* result in hiring a significant number of technical personnel who were highly qualified in 1994 or 1995. Further, the technical applicant hiring process used by DOE in 1994 tended toward selection of a *marginally qualified candidate. Selection of highly qualified candidates occurred with no greater frequency than that expected through a random process.* Of particular significance, the technical applicant hiring process used by DOE in 1995 showed *no improvement over that used in 1994.*

Up to this point, this presentation has centered on the acquisition of scientific and technical expertise. However, as has been shown, DOE has not focused on this effort. Rather, DOE has placed its emphasis on an alternate means of raising the technical expertise of the Department -- *improving* the technical expertise of the incumbent staff within selected programs in the defense nuclear complex.

## **DOE Technical Qualification Program [slide 13]**

The centerpiece of the DOE effort to upgrade the technical expertise of its incumbent staff is the DOE Technical Qualification Program. This program has been under development since November 1993, and, under the original Recommendation 93-3 Implementation Plan, was to have been implemented and initially assessed by December 1995. Delays in the development of several aspects of the program have led to the current situation, in that the DOE Technical Qualification Program was officially initiated on December 31<sup>st</sup>, 1995, with several requisite pieces still not in place.

In brief, the program delineates the following steps to be followed by each DOE technical person in the defense nuclear complex:

- Complete the **General Technical Base Qualification Standard**.
- Complete applicable [as assigned out of the total of 23] the complex-wide **Technical Specialist** (sometimes called *Functional Area*) **Qualification Standards**. Sections deemed not applicable to the current position may be exempted.
- Complete applicable **Site- or Facility-specific Technical Specialist** (*Functional Area*) **Qualification Standards** (which are to be locally produced at each site).

## **DOE Technical Qualification Program Functional Areas [slide 14]**

The Technical Qualification Program Functional Areas selected by DOE are shown on this slide.

Once the incumbent DOE technical personnel in the defense nuclear complex have been identified by their management, and assigned their functional area, they have until May 1998 to complete their qualification requirements. Newly reporting personnel will be given two years from their date of arrival to complete these qualification requirements.

The **Site- or Facility-specific Technical Specialist Qualification Standards** are intended to provide tailored competencies beyond those found in the Complex-wide standards, yet determined to be necessary by the responsible Cognizant Secretarial Officer (CSO) or Field Office Manager. They were to be in place when the program was initiated in December 1995. However, many are not yet developed.

Of note, the issue of determining which positions must be categorized as "technical," and therefore included in this qualification program, is left up to the individual CSOs and Field Office Managers. Certain ground rules apply:

- Senior Executive Service (SES) personnel are exempt from this system; *only GS-15 and below* are included
- GS-15 and below personnel in the 800 (engineer) and 1300 (scientist) *occupational series* assigned to the defense nuclear complex must participate

- Other GS-15 and below personnel, "who, according to their duties and responsibilities, provide direction, guidance, oversight, or evaluation of contractor technical activities" must also participate
- Additional GS-15 and below personnel, as determined by the CSO or Field Office Manager, may be selected to participate

Additionally, exemptions and exceptions to Qualification Standard competencies *are allowed*, as recommended by each employee's supervisor, but they must be approved by the second level of supervision. The decision to pursue exemptions or exceptions is at the discretion of the employee and his supervisor.

#### **Board Staff Issues with DOE Technical Qualification Program [slide 15]**

In reviewing the DOE Technical Qualification Program through its development process, the Board staff has taken issue with the four particular aspects of DOE's implementation shown on this slide:

- Identification of Participants
- Qualification Standard Adequacy
- Competency Required for Qualification
- No Independent Qualification Authority

I shall discuss each of these issues in turn.



**Issue: Identification of Participants [slide 16]**

Reviews of assignments of personnel to functional areas at various Operations Offices and Headquarters reveal a lack of any senior level management or planning of the assignment process.

For example, after initial assignments had been made [based on November 1995 data]:

- The Richland Field Office had no assigned federal expertise in the areas of civil/structural engineer, construction management and engineering, electrical engineer, or instrumentation and controls engineer, despite the significant efforts underway to maintain, sample, and design processing systems for 177 high level waste tanks.
- The Rocky Flats Field Office had no assigned federal expertise in the areas of construction management and engineering or facility maintenance management, despite significant on-site problems in these areas; a significant number of technical personnel remain unassigned to date.
- Significant numbers of people have selected the Technical Manager and the Project Management qualification standards as their primary functional area. The Board Staff has identified these standards as inadequate due to the lack of technical requirements. This leads to the next issue.

**Issue: Adequacy of Qualification Standards [slide 17]**

The 23 Complex-wide Functional Area Technical Qualification Standards that DOE has

developed were reviewed by the Board staff. Note that, in the review, only the competencies and their supporting knowledge or skill factors in each qualification standard were considered. It was assumed that implementation would be effective. Based on the review:

- Twelve (12) qualification standards would be adequate if specific improvements were made.
- Five (5) qualification standards are marginal. Neither *Electrical Systems Engineer* nor *Instrumentation and Control Engineer* include any focus on Safety Class Systems. *Waste Management* focuses on regulatory issues to the detriment of technical issues. *Fire Protection* does not specifically invoke Fire Protection Engineer requirements. *Chemical Processing* does not adequately treat process safety or design considerations.
- Three (3) qualification standards are inadequate. *Technical Manager* and *Project Management* are NOT technically oriented. Qualification in some other technical functional area should be a prerequisite. *Radiation Protection* does not adequately prescribe requirements for Key Radiation Protection Positions per Recommendation 91-6.

At this point in the program, Site- or Facility-specific Functional Area Technical Qualification Standards remain a significant unknown. None have been reviewed yet, and many are not yet developed, despite the fact that the program has officially been initiated.

**Issue: Definition of Required Competency [slide 18]**

Much of the training to meet the Qualification Standards has yet not been identified, developed, or promulgated. New training packages to meet 93-3 Qualification Standard competencies are being developed under the Lead Site Concept, but they are NOT complete. This includes the development of new courses needed to set the standard for various competencies.

Equivalency determinations, for specific licenses/certificates/experience, or for existing defense nuclear complex Training Courses, have not yet been developed or promulgated. A pilot program under DOE-DP to identify experience equivalencies has not been formally endorsed for DOE-wide use, and is not complete.

Program implementation has been left to the individual CSOs and Field Office Managers.

Significant variability in methods and rigor of application have been observed to date. And the means used to evaluate satisfactory mastery of a competence is also subject to question, as illustrated in the next issue.

**Issue: Adequacy of Qualification Authority [slide 19]**

A key element of the DOE Technical Qualification Program is the determination of the difference, or "DELTA," between the knowledge, skills, and abilities of an incumbent with respect to those required by his qualification standards. This determination is being left to current supervisors,

with little or no guidance. It is not clear that each supervisor understands the significance of his actions with respect to exemptions, equivalencies, and qualification signatures. Further, and perhaps more importantly, this "DELTA" determination will be made by supervisors whose technical expertise is suspect and not defined by the qualification standards.

### **DOE Technical Education Program [slide 20]**

Beyond the DOE Technical Qualification Program, education provides another method for improving the current DOE technical work force. Many of the Department's technical needs cannot be addressed by *training*, but rather require formal academic *education* methods. The DOE Recommendation 93-3 Implementation Plan committed to expand present programs, and create additional educational opportunities. Educational needs above entry-level were to be defined by technical succession planning and career path development.

These programs have not been defined. Moreover, revisions to DOE Order 360.1, *Training*, have restricted entry into education programs in DOE.

As a further difficulty, the Technical Personnel Performance Indicator Report was identified as a means of tracking educational achievements. Recent reports have provided indication only for a portion of technical personnel educational activities, and the data that *is* available has proven to be unreliable.

## **Summary [slide 21]**

In summary, the data presented today indicates that

- Excepted Service Personnel Authority has not been used aggressively by DOE to obtain highly qualified scientific and technical expertise.
- General Schedule hiring processes used by DOE are ineffective with regard to identifying and hiring employees well-matched to the technical requirements of their positions.
- The DOE Technical Qualification Program, which is the main effort underway to raise the technical expertise of incumbent DOE personnel, is suspect.
- DOE's Technical Education Program remains ill-defined.

**ATTACHMENT 1**  
**Sampling of Letters/Board Staff Trip Reports**  
**Addressing Technical Competence Provided to DOE**

Letter, Chairman Conway to Acting Assistant Secretary Beckner, dated 05/03/93  
[encl] Observations from a Trip to the Albuquerque Field Office, February 22-24, 1993

Letter, Chairman Conway to Assistant Secretary Grumbly, dated 05/11/93  
[encl] Fernald Environmental Management Project - UNH Neutralization Project Review Trip Report (April 21-22, 1993)

Letter, Chairman Conway to Assistant Secretary Reis, dated 11/15/93  
[encl] Trip Report of Order Compliance Review at the Nevada Test Site (NTS)

Letter, Chairman Conway to Assistant Secretary Grumbly, dated 01/27/94  
[encl] Review of K-Basins at Hanford

Letter, Technical Director Cunningham to Mr. Whitaker, dated 04/10/94  
[encl] Report on the Radiation Protection Case Study of the Dismantlement and Decontamination Project at the Old HB-Line

Letter, Chairman Conway to Secretary O'Leary, dated 05/11/94  
[encl] Report on the Radiation Protection Program at the Hanford Site

Letter, Technical Director Cunningham to Mr. Whitaker, dated 05/13/94  
[encl] Trip Report - Review of Implementation of DNFSB Recommendation 93-5 at the Hanford Site, March 28-31, 1994

Letter, Technical Director Cunningham to Mr. Whitaker, dated 07/15/94  
[encl] Report on Review of Hanford Facility Representatives Program

Letter, Chairman Conway to Secretary O'Leary, dated 07/20/94

Letter, Technical Director Cunningham to Mr. Whitaker, dated 07/28/94  
[encl] Trip Report for Staff Visit to NTS, April 28-29, 1993

Letter, Technical Director Cunningham to Mr. Whitaker, dated 08/10/94  
[encl] Training, Qualification, and Conduct of Operations Review at the Fernald Environmental Management Project, April 11-13, 1994

Letter, Technical Director Cunningham to Mr. Whitaker, dated 09/21/94  
[encl] Rocky Flats Plant - Trip Report on the Review of Building 371 Seismic and Systems Design Bases, Special Nuclear Material Storage, and Systematic Evaluation Program Status

Letter, Technical Director Cunningham to Mr. Whitaker, dated 10/21/94  
[encl] Report on Development and Implementation of S/RIDs at Hanford High Level Waste Storage Tanks

Letter, Chairman Conway to Assistant Secretary Reis, dated 11/25/94  
[encl] Los Alamos National Laboratory (LANL) - Review of Chemistry and Metallurgy Research (CMR) Facility Hot Cell Upgrades and the Fire Resistant Pit (FRP) Test Program

Letter, Technical Director Cunningham to Mr. Whitaker, dated 12/15/94  
[encl] Pantex Site - DNFSB Staff Trip Report - Emergency Preparedness Exercise Review

Letter, Technical Director Cunningham to Mr. Whitaker, dated 04/10/95  
[encl] Savannah River Site (SRS) - Review of Preparations for the Decontamination and Decommissioning (D&D) of the Separations Equipment Development (SED) Facility

Letter, Technical Director Cunningham to Mr. Whitaker, dated 07/05/95  
[encl] Review of Implementation of Board Recommendation 92-4 and Hanford Tank Farms Activities

Letter, Technical Director Cunningham to Mr. Whitaker, dated 07/15/94  
[encl] Defense Waste Processing Facility Trip Report July 6-8, 1993

Letter, Technical Director Cunningham to Mr. Whitaker, 07/28/95  
[encl] Nuclear Explosives Safety Study: Arming & Firing and Timing & Control (A&F/T&C) System for Lawrence Livermore National Laboratory Devices at the Nevada Test Site

Letter, Technical Director Cunningham to Mr. Whitaker, dated 08/14/95  
[encl] Trip Report - Review of the Department of Energy - Richland Operations Office (DOE-RL) Oversight of DOE Order 5480.21, *Unreviewed Safety Questions*, March 28, 1995

Letter, Chairman Conway to Assistant Secretary Grumbly, dated 09/05/95  
[encl] Implementation of Recommendation 93-4 - Richland Operations Office Technical Management Plan, Report of Site Visit, August 1-3, 1995

Letter, Chairman Conway to Assistant Secretary Grumbly, dated 09/08/95  
[encl] Review of Procedures at the Hanford Site

Letter, Chairman Conway to Secretary O'Leary, dated 09/24/93

Letter, Technical Director Cunningham to Mr. Whitaker, dated 09/27/95  
[encl] Pantex Site - DNFSB Staff Report - Conduct of Operations and Training and Qualification Program Review

***Written Submission for the Record:  
Defense Nuclear Facilities Safety Board Public Meeting  
of January 23, 1996***

**Background**

At the Defense Nuclear Facilities Safety Board (Board) public meeting of January 23, 1996, during the testimony of Timothy J. Dwyer regarding *Raising the Technical Expertise Within Selected DOE Programs in the Defense Nuclear Complex*, Chairman Conway requested an explanation of the uses of and the differences between the Position Descriptions and the Recommendation 93-3 Technical Qualification Standards employed by the Department of Energy (DOE). This document is submitted in response to that request.

**Summary**

Position Descriptions describe the duties and responsibilities associated with a particular position, and are used to derive the Vacancy Announcement Qualification Requirements used TO HIRE an individual. The Recommendation 93-3 Technical Qualification Standards, on the other hand, are intended for use AFTER an individual has been hired into a position, as part of a formal post-employment qualification program.



## **Discussion**

The term **Position Description** is defined in the *U.S. Office of Personnel Management Introduction to the Classification Standards*, as follows:

“The official description of management’s assignment of duties, responsibilities, and supervisory relationships to a position.”

In the case of the DOE, the quality of the Position Descriptions reviewed by the Board Staff has varied considerably from site to site, and from position to position. However, for the better quality Position Descriptions, the following elements are normally included:

- Position Title, Series, and Grade Level. [self-explanatory]
- Functional Statement. This element describes in general terms the duties associated with the position, as well as how the position fits into the existing management hierarchy -- especially the title of the supervisor to which this position reports.
- Major Duties. This element describes in detail the principal duties and responsibilities of the position.
- Factors. This element describes nine (9) specific attributes of the position, including: (1) Knowledge Required by the Position; (2) Supervisory Controls [over the position]; (3) Guidelines [level of detailed guidance available]; (4) Complexity;

(5) Scope and Effect [sphere of influence]; (6) Personal Contacts [levels of management or external agency with whom interaction is expected]; (7) Purpose of Contacts; (8) Physical Demands; and (9) Work Environment.

When a Position Description is used as part of the DOE hiring process, it is paired with a Vacancy Announcement. The Vacancy Announcement is the publicly released document that actually serves notice of the vacant position, and provides the Qualification Requirements that an applicant to the position must meet in order to be considered for the position. These Qualification Requirements include specific Education, Experience (including time-in-grade aspects), and other prerequisites. Note that a Vacancy Announcement also includes another important restriction on the effective candidate pool for the position: the Area of Consideration (i.e., must candidates be drawn from the existing DOE population, from the existing Federal service population, from the local population, or from the nationwide population).

The Vacancy Announcement is actually the yardstick by which applicants are measured for the job. However, when constructed properly, the Vacancy Announcement Qualification Requirements are based on the Major Duties and the nine Factors that comprise the associated Position Description. Thus, in practice, the Position Description should be written and classified before the Vacancy Announcement, and the Vacancy Announcement should be an accurate reflection of the attributes an applicant must possess to be considered for the position. [Note that once the position is filled, the Vacancy Announcement is no longer effective, whereas the Position

Description remains as the base document from which the employee's annual Performance Appraisal standard should be developed.]

At DOE, both the Position Description and the Vacancy Announcement are developed by the Human Resources personnel supporting the Office in which the position is located. In the case of the Position Description, input from the supervisory elements to which the position reports is solicited -- of late, it has been reported that the quality and level of detail of the input has improved, as well as the propensity of the Human Resources personnel to incorporate it. At some DOE sites, it has further been reported that Offices of Training are also being directed to review and concur with the Position Descriptions, in order to ensure that elements of the Recommendation 93-3 Technical Qualification Standards are included in the documents.

It should be noted that the *U.S. Office of Personnel Management Operating Manual, Qualification Standards for General Schedule Positions* includes a significant number of Qualification Requirements -- the specific Education, specialized Experience, training, and other Ranking Factors -- applicable to individual job categories and general schedule grades. However, these lists of requirements are not in any way related to the Recommendation 93-3 Technical Qualification Standards. The U.S. Office of Personnel Management lists are designed for use in conjunction with the Vacancy Announcements used to hire personnel into the DOE. The Recommendation 93-3 Technical Qualification Standards are NOT part of the hiring process. Rather, they are designed to be:

“formal post-employment qualification requirements... for all technical positions directly involved with programs and operations that have a direct impact on the safety of any of the Department’s defense nuclear facilities.”

[*Professional Development of Federal Technical Personnel*, U.S. Department of Energy, June 29, 1994]

The Recommendation 93-3 Technical Qualification Standards are the documents that identify the competencies (i.e., the knowledge, skills, and abilities) that an individual in a specific discipline in the DOE defense nuclear complex is expected to possess to perform their specific duties and responsibilities. Note that the differences between these Recommendation 93-3 Technical Qualification Standards and the Position Descriptions include:

- The Recommendation 93-3 Technical Qualification Standards are intended for use AFTER the individual has been hired into a position using the Vacancy Announcement/Position Description, as discussed above.
- The Recommendation 93-3 Technical Qualification Standards are discipline specific (i.e., broken down by functional area), whereas the Position Descriptions are individually tailored to each job.

Use of the Recommendation 93-3 Technical Qualification Standards is mandated for technical personnel in the defense nuclear complex by DOE Order 360.1, *Training*, which also specifies

that an individual is allotted two (2) years from his/her date of hire to complete his/her assigned Standards. [Those individuals who were already incumbent at DOE when DOE Order 360.1 became effective were given a completion date of May 31, 1998.]

The Recommendation 93-3 Technical Qualification Standards are part of the new DOE Technical Qualification Program, which was developed as a commitment for the DOE Implementation Plan for Recommendation 93-3. A hierarchy of Standards has been developed. ALL DOE defense nuclear complex technical employees must complete:

- The *General Technical Base Qualification Standard*
- At least one [as assigned out of the available 23] Department-wide *Technical Specialist* (sometimes called *Functional Area*) *Qualification Standard*
- Any applicable *Facility- or Site-Specific Technical Specialist (Functional Area) Qualification Standards*

DOE intends that the Facility- or Site-Specific Technical Specialist Qualification Standards tailor the set of competencies assigned to each individual through this three-tiered hierarchy to the specific requirements of his/her job. Thus, the end result will be a set of competencies that capture all of the requirements associated with the original Position Description.

Further, DOE Order 360.1 mandates that, in the future, when DOE is filling positions that will require participation in the Technical Qualification Program, the technical competencies identified in the Recommendation 93-3 Technical Qualification Standards should be incorporated back into the candidate selection process. Specifically, as Position Descriptions are developed or revised, Recommendation 93-3 Technical Qualification Standard competencies should be inserted. At present, it is not clear how this mandate will be implemented.

Development of the Recommendation 93-3 Technical Qualification Standards occurs through one of two methods. The *General Technical Base Qualification Standard* and the 23 Department-wide *Technical Specialist Qualification Standards* were developed by 24 dedicated groups of subject matter experts recruited from the Program and Operations Offices by the Technical Personnel Program Coordinator (HR-1.5). Each Standard was then reviewed by stakeholders from across the complex, its designated management sponsor (either the Office of Defense Programs, the Office of Environmental Management, the Office of Environment, Safety and Health, or the Office of Field Management), and HR-1.5, ultimately being submitted to the DOE Technical Excellence Executive Committee for review and approval.

On the other hand, the *Facility- or Site-Specific Technical Qualification Standards* are developed under the auspices of the DOE Office or Field Element to which they apply. Development of these Standards is not yet complete. Methods used to develop them have not been uniform -- in some cases, DOE employees developed these local Standards, whereas, in other cases, development has largely been handled by DOE support contractors.