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

I N D E X

PROCEEDINGS

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.

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

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

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

CHAIRMAN CONWAY: Fine.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

CHAIRMAN CONWAY: That was issued in June of 1993.

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

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

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

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

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

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

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

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

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

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

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

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

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

In Recommendation 93-3, we asked the Department to seek excepted appointment authority from Congress. Before I get in to any other discussion, to avoid confusion for members of the public, I should define what I mean by "excepted appointment authority" or "excepted appointment service." Simply put, excepted service appointment, Mr. Chairman, is the 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 V of the United States Code.

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

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

CHAIRMAN CONWAY: That included the Nuclear Regulatory Commission?

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

CAPT. CRAWFORD: Could I interrupt for a moment?

MR. ANDERSEN: Sure.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

expected.

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

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

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

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

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

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

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

to use it exists.

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

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

CAPT. CRAWFORD: And not used?

MR. ANDERSEN: Never used for a single hire.

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

MR. ANDERSEN: That is correct.

CHAIRMAN CONWAY: Okay.

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

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

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

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

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

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

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

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

CHAIRMAN CONWAY: Woody?

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

Mr. Dwyer?

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

of the Board, Dr. Cunningham, Mr. Andersen, Mr. Pusateri. My name is Timothy Dwyer. I'm currently a member of the Standards Group of the Board's Technical Staff and the purpose of my testimony today is to provide a summary and an evaluation of the actions taken over the last two years by the Department of Energy 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 in DOE. In acting in 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. In fact, the latest Annual Report published in February of 1995, states and I'll quote here, "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 commentary we will offer. As will be shown in this testimony, little to no improvement has been noted.

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

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

The Board has also provided the Department over two dozen letters addressing DOE technical competence, many enclosing trip reports generated by the Board's staff. Over the past years, the staff trip reports have focused on reviews of technical issues across the complex, during the course of which the staff has observed firsthand 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 the last three years includes specific comments on Headquarters' staffs, as well as complex site staffs from Savannah River to Hanford, from Fernald to Pantex. I would like to provide as attachment to my testimony to the public record a list of the 24 reports that were issued over the last three years.

CHAIRMAN CONWAY: It will be accepted without objection.

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

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

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

With regard to technical hiring, DOE has several tools available to correct noted problems. DOE had 200 excepted service positions that were authorized under the Department of Energy Act which were not being used. As stated by Mr. Andersen, the 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 in the Defense Nuclear Complex. Most of these billets -- these are general schedule billets that were controlled by the Office of Environmental Management for distribution across the operations and field operations at various sites.

CHAIRMAN CONWAY: These are all new positions?

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

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

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

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

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

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

MR. DWYER: Yes.

CHAIRMAN CONWAY: However, and I make a

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

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

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

MR. DWYER: Yes sir.

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

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

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

CHAIRMAN CONWAY: Good.

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

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

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

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

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

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

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

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

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

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

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 technical personnel hiring efforts. The lack of feedback is a further indication of a failure to manage the process adequately.

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

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

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

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

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

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

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

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

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

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

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

CHAIRMAN CONWAY: It went the other way.

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

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

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

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

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

Do you have any comment on that?

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

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

MR. DWYER: Yes sir.

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

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

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

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

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

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

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

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

MR. DWYER: No sir.

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

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

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

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

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

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

MR. DWYER: In some cases, yes sir.

DR. EGGENBERGER: Okay.

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

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

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

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

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

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

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

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

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

MR. DWYER: Yes sir.

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

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

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

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

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

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

DR. EGGENBERGER: Okay.

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

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

MR. DWYER: Yes sir. The fact that I

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

DR. EGGENBERGER: Okay. Thank you.

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

CHAIRMAN CONWAY: Yes.

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

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

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

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

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

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

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

MR. DiNUNNO: If I took --

DR. CUNNINGHAM: Mr. DiNunno?

MR. DiNUNNO: Yes.

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

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

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

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

MR. DWYER: Not to my knowledge, sir.

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

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

that question, sir. I would have to ask.

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

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

CHAIRMAN CONWAY: Go ahead.

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

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

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

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

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

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

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

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

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

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

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

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

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

The decision to pursue exemptions or

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

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

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

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

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

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

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

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

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

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

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

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

Five of the qualification standards are marginal, in particular, electrical systems engineer and the I & C control -- I'm sorry, the instrumentation and control engineer -- do not 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, and the chemical processing standard does not adequately treat process safety or design considerations.

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

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

to qualify under, a large number of them.

MR. DWYER: Yes sir.

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

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

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

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

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

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

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

MR. DWYER: No sir.

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

MR. DWYER: Yes sir.

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

Do you agree or disagree?

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

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

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

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

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

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

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

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

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

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

CHAIRMAN CONWAY: Okay, go ahead.

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

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

DR. EGGENBERGER: That's the point.

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

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

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

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

MR. DWYER: Yes sir.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

MR. DWYER: Yes sir.

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

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

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

MR. DWYER: Yes sir.

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

MR. DWYER: Yes sir, very similar.

DR. EGGENBERGER: Similar to that, but I

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

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

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

CHAIRMAN CONWAY: Fine.

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

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

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

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

illustrated in the next issue.

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

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

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

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

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

MR. DWYER: Yes sir.

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

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

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

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

current DOE technical work force.

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

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

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

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

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

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

they believe it to be an anomaly.

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

MR. DWYER: Yes sir.

CHAIRMAN CONWAY: Okay.

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

Steve?

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

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

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

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

Proceed.

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

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

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

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

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

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

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

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

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

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

within 60 days.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

CHAIRMAN CONWAY: These were new positions?

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

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

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

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

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

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

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

headquarters.

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

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

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

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

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

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

any attention --

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

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

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

CHAIRMAN CONWAY: By whom?

CAPT. CRAWFORD: I don't know.

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

CAPT. CRAWFORD: Labeled "proposal."

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

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

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

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

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

deficiencies in safety-related performance.

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

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

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

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

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

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

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

current AAO staff."

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

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

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

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

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

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

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

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

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

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

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

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

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

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

CAPT. CRAWFORD: All right.

MR. KRAHN: But I would also note --

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

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

DR. EGGENBERGER: Thank you.

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

MR. KRAHN: Yes, but I would note that

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Have extensive nuclear backgrounds and

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

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

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

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

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

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

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

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

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

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

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

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

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

MR. KRAHN: Three percent.

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

MR. KRAHN: It's 11.

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

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

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

CHAIRMAN CONWAY: I understand.

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

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

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

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

CHAIRMAN CONWAY: Mr. Crawford?

CAPT. CRAWFORD: I'd like to make a

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

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

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

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

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

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

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

CHAIRMAN CONWAY: Any other further

questions with Mr. Krahn?

Woody?

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

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

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

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

for improvement.

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

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

Thank you, Mr. Chairman.

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

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

CHAIRMAN CONWAY: You may.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

DOE has been ineffective in carrying out

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

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

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

DOE demonstrates undue difficulty in

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

MR. ANDERSEN: Which number?

CAPT. CRAWFORD: 90-2.

MR. ANDERSEN: That's correct.

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

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

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

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

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

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

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

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

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

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

CHAIRMAN CONWAY: Integrate.

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

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

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

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

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

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

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

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

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

CHAIRMAN CONWAY: DOD.

CAPT. CRAWFORD: DOD's involvement within

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

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

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

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

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

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

that's been repeated so frequently here today.

That completes my remarks.

CHAIRMAN CONWAY: Thank you, Mr. Crawford.

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

CAPT. CRAWFORD: Thank you.

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

With that now we will recess subject to

the call of the chair.

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

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. Ettlinger 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

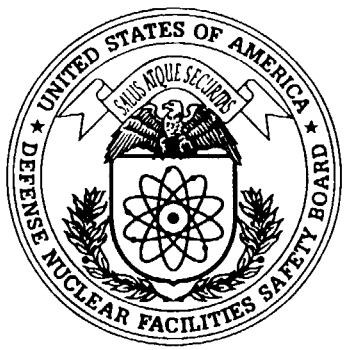
* * *

(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 fro 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 5th, 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 31st, 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.