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Title: Discussion/Possible Vote on Full Power Operating License for Braidwood-1

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D I S C L A I M E R

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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DISCUSSION/POSSIBLE VOTE ON FULL POWER OPERATING LICENSE FOR BRAIDWOOD-1

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PUBLIC MEETING

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Nuclear Regulatory Commission
Room 1130
1717 H Street, Northwest
Washington, D.C.

Tuesday, June 30, 1987

The Commission met in open session, pursuant to notice, at 2:05 o'clock, p.m., the Honorable Lando W. Zech, Jr., Chairman of the Commission, presiding.

COMMISSIONERS PRESENT:

LANDO W. ZECH, JR., Chairman of the Commission
THOMAS M. ROBERTS, Member of the Commission
JAMES K. ASSELSTINE, Member of the Commission
FREDERICK M. BERNTHAL, Member of the Commission
KENNETH CARR, Member of the Commission

STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

SAMUEL CHILK
WILLIAM PARLER
VICTOR STELLO
JAMES O'CONNER, CECO
EUGENE FITZPATRICK, CECO
CORDELL REED, CECO
THOMAS MURLEY, NRR
JANICE STEVENS, NRR
A. BERT DAVIS, REGION III
CHARLES NORELIUS, REGION III

AUDIENCE SPEAKERS:

JACK HAYES, NRR

P R O C E E D I N G S

[2:05 p.m.]

CHAIRMAN ZECH: Good afternoon, ladies and gentlemen.

The purpose of today's meeting is for the Commonwealth Edison Company and the Staff to brief the Commission concerning the readiness of Braidwood Unit 1 to receive a full power license. This meeting includes considerations of the immediate effectiveness review of the Licensing Board's decision on Braidwood Unit 1. At the conclusion of the meeting, if the Commission is ready, we will -- we intend to vote on whether or not to issue an order declaring the immediate effectiveness of the Licensing Board's decision on Braidwood and to authorize the Director of NRR, the Nuclear Reactor Regulatory Office, after making the appropriate findings, to issue a full power operating license for Braidwood Unit 1.

Since this licensing proceeding involves a pending appeal, I will ask that the General Counsel closely monitor the proceeding to assure that today's discussion does not touch on contested issues that may later come before the Commission.

I understand that copies of the slides of the presentation are available at the back of the room.

Do any of my fellow Commissioners have any opening comments to make.

COMMISSIONER ASSELSTINE: No.

CHAIRMAN ZECH: If not, Mr. O'Conner, you may proceed with your presentation.

MR. O'CONNER: Thank you very much, Mr. Chairman, and good afternoon, gentlemen.

I am James O'Conner, Chairman, President, and Chief Executive Officer of Commonwealth Edison Company, and with me at the table today at my right is Cordell Reed, recently appointed our Senior Vice President, who is responsible for our nuclear operations, and to my left is Mr. Eugene Fitzpatrick, who is the Station Manager for Braidwood.

We very much appreciate this opportunity to be here. I will make a few opening remarks and describe the basis for my belief that Braidwood Station is ready to receive a license for full power operation.

Cordell Reed will discuss our nuclear management reorganization, regulatory performance at our other Edison stations, and succession planning for our management personnel.

Mr. Fitzpatrick will discuss the Braidwood shift staffing and experience.

Today's presentation represents the culmination of fifteen years of effort. I am here today to confirm that the safe and reliable operation of our nuclear plants and the successful completion of our nuclear construction program have been the dominant priorities throughout my entire career with Edison and have been the principal focus of my personal

activities since I was named President of the company almost ten years ago.

Commonwealth Edison has an extremely strong project management system to build our nuclear plants. The individual who directs the construction of these plants has reported directly to me for the past seven years. This was deliberately done to assure that there could be no mistake in anyone's mind in our company as to the importance that we attach to the quality, construction, and completion of our nuclear power plants.

My contact with the Manager of Projects has been on a daily basis, including weekends and oftentimes several times a day. We would discuss progress, problems, and personnel. I think it is fair to say that I have participated in or reviewed every personnel assignment at a senior level that has taken place at Braidwood in the past seven years.

In addition, we expect our quality assurance organization at Commonwealth Edison to provide a strong third-party, independent monitoring of our nuclear stations' construction and operations. Quality assurance overviews at Braidwood demonstrate compliance with the station's procedures and requirements. I might not parenthetically that the Manager of Quality Assurance for the company also reports directly to me.

I have made frequent trips to the site to meet with

the project management team and often with the senior management of the contractors. Neither the Manager of Projects nor, for that matter, any senior management at the site has ever been reluctant to inform me of the status of the project or to seek assistance in those instances where they felt that I might be helpful.

Also the business at our monthly Board meeting was a discussion of the status of construction at our nuclear plants. Our Board has traditionally taken a special interest in our nuclear plants under construction as well as those in operation. In the case of Braidwood, has twice visited the site.

In addition, we have a special Board Committee on Nuclear Operations, which is composed of retired Admiral Dennis Wilkinson, former NRC Commissioner, Dr. Edward Mason, and Dr. Thomas Martin, President Emeritus of the Illinois Institute of Technology, who remain especially close to our nuclear activities.

Braidwood Unit I is a proven design. it's a replica of the two units now in operation at our Byron Station. I'm pleased to report that Braidwood Unit I is critical. Low power testing has been completed. The unit is ready to proceed in its power ascension program. We do not anticipate any difficulties through the remainder of the start-up testing program.

When Cordell Reed was here five months ago for the meeting on Byron, he discussed the superior start-up that Byron Unit II was having. He attributed that in part to experienced station management, a strengthening of corporate support and the vast experience that we gained from the start-up of Byron Unit I.

The start-up of Byron II has continued to be very successful and is close to completion today. Byron Unit I generated more power than any other nuclear unit in the country in 1986 and sustained a 133 day continuous run during its first cycle. In the Spring of this year, INPO gave Byron its highest rating. In addition, Byron's training program has been fully accredited and Byron is now a full member of the National Academy for Nuclear Training. Finally, Byron received a very positive SALP report during the most recent rating period.

The reason I mention all of these positive aspects about Byron is because much of the success attributable to improvement programs initiated in the area of operations, radiation protection, security and maintenance. The major elements of all these programs have been incorporated into the directives and procedures for Braidwood as well.

I believe this effort along with a proven plant design which is a duplicate of Byron's, will assure that Braidwood will also be a top performer.

Finally, with respect to Braidwood's readiness, we

are in the position to accept a full power operating license. The existence of a strong on-site management organization has provided firm control of construction activities and has established the proper direction for successful completion of the station.

As a result, both units at Braidwood have been on schedule for completion of every significant construction and testing milestone since they were established in late 1985. That's without exception. Successful completion of milestones on Unit I such as the reactor coolant system, cold hydro, the integrated hot functionals, the emergency core cooling system, full flow, and integrated leak rate testing, were accomplished as scheduled and led to fuel load on October 25, 1986.

These activities were performed in an exemplary manner with no sacrifice of quality.

We have made every effort to assure full confidence in the construction quality of Braidwood. One major effort that we organized to accomplish this was the Braidwood construction assessment program or BCAP. BCAP provided a comprehensive program of re-inspections and reviews. Its focus on past construction provided an additional basis for my confidence that the past, ongoing and future safety related work at Braidwood has resulted in completed systems that meet the NRC's requirements.

Tom Maimon, who was our Vice President and Manager of

Projects, is now our Vice President, Corporate Vice President, in charge of PWR operations. As a consequence, he will have direct oversight at the corporate level of the Braidwood Station. He brings with him the working knowledge of the construction of Byron and Braidwood and the attributes that made the Byron and Braidwood project organization so successful.

I would now like to call on Cordell Reed who will then be followed by Gene Fitzpatrick, our Braidwood Station Manager. Gene has extensive experience in both Naval and commercial nuclear power. He will explain the current status of the plant and our plans to start up Unit I. Based on his background and demonstrated performance, I have full confidence that he will operate the Braidwood Station in a safe and reliable manner.

Thank you, gentlemen. Cordell?

MR. REED: Thank you, Jim.

As Jim said, when I was here five months ago, I talked about the very excellent start-up we were having on Byron Unit II and that experience has continued. Outside of having a super station staff, which we have a great staff that learns well, part of our success I felt was the strengthening of our corporate support.

The most significant change at our corporate structure management level at that time was the establishment

of two Division Vice President positions within our Nuclear Division. One overseeing our newer stations, LaSalle, Byron and Braidwood, and the other overseeing our older stations, Dresden, Quad Cities and Zion.

We chose two of our most experienced and successful station managers to be our Division Vice Presidents. They spent three to four days a week at our nuclear stations. This has provided stability in corporate direction and has ensured effective corporate support.

On June 5th, we made a further improvement in the organization of our corporate management. I have been elevated to Senior Vice President and two Corporate Vice Presidents have been appointed to direct our PWR operations and our BWR operations. Three station managers and an engineering manager report in line to the Vice Presidents of Operation. Additionally, the Division Vice Presidents I mentioned earlier now remain General Managers, have functional control over the station managers and also report to the Vice President.

We still utilized our leadership and experience three to four days a week in our stations. I have also reorganized our Nuclear Services to more effectively integrate these general office departments into our station operations. All of our Nuclear Services' managers and GO department heads have extensive station experience.

I would like to review the performance of our nuclear

operating units. Our mission is to achieve excellence in our operations, and we define excellence as achieving performance in the upper quartile of INPO industry performance data. This is just not a snappy slogan, but is a carefully developed strategic plan for achieving excellence in our operations. The plan was not developed by consultants, but rather the mission and policies and objectives were developed by me and my senior managers.

More importantly, the action plans for achieving the objectives were developed by the stations and support departments. This process took over a year in planning. We did not set any goals that we can't reasonably be expected to achieve. It will require a substantial improvement in our operations over the next five years, but our strategic plan is the master plan for our stations and GO-goalsetting.

Let me now relate how we're doing in our operations. I am sure that management by exception for you necessarily makes you aware of mostly the weaknesses in our plant performance. However, let me tell you a few positives about our operations to help in your appreciation of our total operations.

As Jim said, Byron Unit 1 generated more electricity in 1986 than any other nuclear unit; however, Zion Unit 1 came in third in the country. Zion Station has generated more lifetime electricity than any multi-unit station in the

country, and in terms of SCRAMs, INPO data show that last year Quad Cities Unit 1 was fourth best in the country, and three CECO units were in the best quartile in SCRAM performance. Seven out of our nine CECO units had zero safety system actuations in 1986, and in terms of civil penalties from the NRC, Zion Station has gone three years without a civil penalty, Quad Cities has gone two years, and prior to this year, Dresden had gone two years.

Now we receive two major evaluations of our stations each year. One is from the INPO plant evaluation, and the other is from the NRC SALP review. In terms of INPO, this is how they view our stations. INPO views Quad Cities, Zion and LaSalle in the broad middle of their performance ratings. Although this is good, it does not fulfill our strategic plan for being in the upper quartile of INPO's performance standards by 1991. And I am proud to report, as Jim has related, that Byron Station has achieved our goal, being rated in the top performance rating that INPO has to offer.

In August 1986, INPO conducted a plant evaluation at Dresden that identified a number of weaknesses and resulted in a low rating. Since that time, we have initiated extensive corrective actions to address the concerns and to better manage our station. These include significant personnel changes, including a new Station Manager. In addition, Dresden Station's performance has benefitted significantly from the

enhanced company emphasis on new practices, such as an error-free startup plan which involves added precautions to assure that things are done right the first time and an increased station and corporate involvement in our day-to-day activities, which I described earlier.

As a result, we are beginning to see substantial improvement in station operations and are confident that Dresden will do well at the next evaluation in July. INPO has made short visits to the station to follow up on their evaluation, and they have noted progress.

In February, LaSalle was removed from the Region III list of troubled plants. We have had two years of very solid progress at LaSalle.

Byron Station has set the standard for excellence for all of our nuclear stations, and we have developed a major program to improve the facilities at all of our nuclear stations to meet this standard.

Now last, I would like to discuss our succession planning program for our nuclear operations personnel. The objective of the program is to develop a reference list of candidates for key jobs who are either ready now or could be ready in two to five years for the necessary developmental assignments. The succession planning in my area is done in conjunction with the corporate program, which includes executive positions and goes down to Station Managers. I have

expanded on the corporate program in my area to include many more key positions in the nuclear stations and the GO office departments.

In the stations, we include our top positions, but we also include positions like Master Mechanic, Tech Staff Supervisor, and Shift Control Room Engineer. The key to this program is that the initial list of candidates is developed by the person currently holding the job, thereby allowing grassroots input.

Finally, there is a management development program administered by a Corporate Management Development Committee. The committee is headed by Jim O'Conner, our Chairman, and consists of ten officers of the company, including myself. The committee identifies individuals early in their careers who have shown the potential for top job assignments, such as department heads, Station Managers, and officer. The committee meets monthly and tracks about 150 people. The status and progress of each individual is reviewed at approximately six-month intervals, and developmental moves are planned by the committee.

These are our key management development programs, and we put a great deal of effort into this endeavor.

And now I would like to introduce Gene Fitzpatrick, our Station Manager. Many of you have visited the plant where Gene is at, and I think his pride and his commitment to

excellence is evident.

Gene?

MR. FITZPATRICK: Thank you, Mr. Reed.

My name is Gene Fitzpatrick, Braidwood Station Manager. I will discuss Braidwood's operational readiness in terms of our organization and staffing, including experience levels of our key personnel.

The Unit 1 and Unit 2 schedules are: Unit 1 performance since fuel load, two key plans that we have implemented in association of our startup, our lessons-learned program, and the status of our model spaces program.

Braidwood Station is organized like our five other operating stations. Two Superintendents report to the Station Manager, a Production Superintendent who has responsibility for operations, maintenance and station startup and work planning and a Services Superintendent who is responsible for technical services, including the radiation chemistry groups, quality control, and the technical staff, plus training, security, administrative functions, and regulatory assurance.

I would like to stress that we have implemented within our organization a strong regulatory assurance approach which we feel provides the proper interface and upfront attention with the NRC and other industry and company auditing and evaluation groups. The idea is never to get to a situation where a regulatory improvement program becomes necessary.

Currently, our organization consists of 676 company employees, 389 contracted security personnel, and 287 contracted consultants, including over 100 technicians under station direction who perform instrument calibrations in support of Unit 2.

Our senior personnel at the station and our operations people down through our shift supervision are all well experienced. For example, our top seven managers average 17 years of nuclear experience. Our Operating Engineers average 14 years, and our shift supervision averages over 11 years.

All but our most experienced licensed operators completed a hot license participation program, primarily at Zion or Byron. We have also supplemented our personnel on shift with contracted personnel who participated on shift during the Unit 1 startup at Byron.

Braidwood Unit 1 has achieved a significant set of milestones over the past year and a half, starting with fuel receipt in December 1985. Throughout 1986, we met an aggressive testing schedule and loaded fuel in October within four weeks of the date established in the fall of 1985. We achieved initial criticality on Unit 1 on May 29, 1987 and completed low-power testing on June 12th, three days ahead of schedule.

Unit 1 is currently critical at normal operating temperature

and pressure.

Pending issuance of our full-power license, our schedule for entering Mode 1 is July 4th with the completion of all Unit 1 testing by September 19th and commercial operation by September 26th.

We have also made significant progress on Unit 2 while awaiting the ASLB decision on Unit 1. The start of Unit 2 integrated hot functional testing is scheduled for this week with fuel load scheduled for mid-December 1987.

Our operational performance on Unit 1 to date has been very good. We had an error-free fuel load, as well as error-free mode changes, initial criticality and low-power testing. We have been conservative in our approach to operations when problems, mostly minor in nature, have arisen, and we've taken the time to thoroughly investigate and resolve these problems before proceeding.

Since the issuance of the fuel load license in October 1986, our regulatory performance has also been very good. We continue to see a decrease in the number of personnel errors, LERs, only two in the past three months.

Since fuel load, there have been a few violations against the operating station. We believe these are isolated occurrences for which we have corrective actions complete or underway to prevent recurrence.

While our last SALP ratings were good, we believe

that we have continued to improve in the interim in all areas.

We have had good success at Braidwood identifying our goals and then implementing these plans. There are many examples of this which have worked well. One of these is our error free plan for start-up. The concept for this plan was developed at LaSalle for their 1986 start-ups following outages. The plan helped LaSalle achieve error free start-ups on both units. Subsequently a similar plan was also successful for the Dresden Unit III start-up following their 1986 outage.

We adopted the essence of these plans at Braidwood because they represented a sound method of doing business. Included in our plan are special executive level reviews conducted by our corporate office and periodic meetings chaired by an executive in which Byron and Braidwood personnel both participate.

The plan also provides for establishing during periods of increased activity, a senior manager on shift, adding additional SROs and ROs when necessary, around the clock maintenance coverage, a shift test director in the control room and enhanced control over construction activities.

The shift release process adopted as a part of this plan has been especially beneficial. We bring our shift licensed personnel in a full hour before shift change. The first 20 to 30 minutes are devoted to the individuals walking their areas and reviewing plant status.

[Whereupon, at 2:30 p.m., Commissioner Roberts left the room.]

MR. REED: Following this but prior to relief, these personnel get together and jointly review the plant status and other information they have collected. These meetings are also attended by maintenance foremen, the rad-waste foremen and the rad-chem foremen. After the exchange, the operators conduct the on-station shift relief.

Essentially, this error free plan focuses on communications among the various personnel on shift and serves as a team building tool as well.

A second plan we have adopted at Braidwood is our plan for managing Unit I and Unit II concurrent activities. The intent of this plan is to help assure that appropriate attention, direction, supervision and control exists for taking Braidwood Unit I through its power ascension start-up program, at the same time Unit II is undergoing pre-operational testing.

The overriding priority as stressed in this plan is maintaining Unit I license requirements. The plan is really an extension of the error free plan. Several of the error free plan elements such as the corporate overviews, the shift augmentation and the shift relief process are directly applicable.

Additionally, however, we have further augmented our staff to deal with concurrent Unit I and Unit II activities.

For example, we have established a Unit II control room testing supervisor manned by a Braidwood licensed SRO, who reports to our Station Control Room Engineer and who supervises testing activities on Unit II.

Another aspect of this plan is to carefully monitor control room access including numbers and traffic patterns to minimize control room distractions and congestion. So far during Unit I initial criticality and the lower power testing program, this plan has worked well.

We also believe very strongly at Braidwood in learning from the experience of others. Our Regulatory Assurance Department deals with lessons learned from Byron, other plants and the industry in general.

For example, following the Byron Unit I start-up, a task force was formed to review and document with recommendations problem areas that arose. At Braidwood, we have resolved each of those areas in advance of our start-up. We have also reviewed all Byron deviation reports including LERs, NRC inspection reports, NRC notices of violation, modifications, temporary alterations and even caution cards, to assess applicability to Braidwood. These efforts will continue into the future as new information becomes available.

One of the programs we are extremely proud of at Braidwood is our model spaces program. Each of you that visited Braidwood commented favorably. We started this program

to establish an objective standard of excellence for housekeeping and material condition significantly above the acceptable level. We believe that a clean painted plant helps preserve the equipment, makes it easier to clean up, makes decontamination practical, has extremely positive effects on morale and attitude and improves safety by lowering the threshold of visible problem areas that otherwise could possibly go undetected.

Completion of this program will result in Braidwood being one of the very best in the area of housekeeping.

[Whereupon, at 2:33 p.m., Commissioner Roberts re-entered the room.]

MR. REED: In conclusion, we have the right attitude, the dedication, the ability and the confidence to operate Braidwood safely and reliably. We have set our standards and our goals high. Simply stated, we intend to be the best.

Mr. Chairman and Commissioners, Braidwood is prepared in all respects to receive the full power license.

CHAIRMAN ZECH: Thank you very much. Questions from my fellow Commissioners?

COMMISSIONER ASSELSTINE: Just a couple. Cordell, I appreciate your covering the operating experience for all of your stations. That was one area I was interested in exploring. As you know, that is one we talked about quite extensively about five months ago.

One thing I am interested in; you mentioned the INPO assessments and where your plants stood. Could you give me a little perspective in terms of trends? In which direction are they moving? Are they all moving in an upward direction?

MR. REED: INPO just started their numerical ratings. At least, there was one before this. There is a new system. For some of these plants, it is the first time through. It's hard to say with respect to LaSalle, Zion and Quad Cities. We are in the middle. We want to be on top.

COMMISSIONER ASSELSTINE: Dresden took a downward turn in terms of the August, 1986 evaluation. When are you due again?

MR. REED: In July; next month. Dresden had received acceptable ratings prior to. It's no excuse but we had come out of a nine month piping replacement outage on Dresden. There was some slippage in performance during that period of time.

COMMISSIONER ASSELSTINE: You talked about the corporate reorganization, and I gather it has just taken place within the past month or so. What advantages do you see from that new organization, particularly in focusing attention on your older stations and I guess LaSalle to a certain extent, the ones that appear on the lower end of the scale, and particularly on Dresden?

MR. REED: What I see is attention to detail. Denny

Galley who formerly was in charge of all six plants will have three. We have broken up Engineering so it is more responsive to the station. With Denny Galley and his Division Vice President, they will be able to be in these stations many days during the week and similarly, Tom Maimon. Tom has run our very successful construction and start-up of the Byron and Braidwood units.

Again, it is having more talent to look at pieces of the action that they can look at in detail.

COMMISSIONER ASSELSTINE: One last question on your operators. Can you give me an assessment of your operators' performance in terms of licensing exams? You talked about operating experience. How have you done in terms of preparing your operators for their licenses for Braidwood?

MR. FITZPATRICK: We feel we have done extremely well. We put 66 people up for license and we licensed 63 of those people. Included in that were a few re-exams. If I look at the system as a black box, we licensed 95 percent of the people we intended to license.

COMMISSIONER ASSELSTINE: What has the pass/fail rate been overall in terms of first time?

MR. FITZPATRICK: I believe it is about 85 percent.

COMMISSIONER ASSELSTINE: That covers my questions.

CHAIRMAN ZECH: Commissioner Bernthal?

COMMISSIONER BERNTHAL: I don't really have any

technical questions with respect to the plant. It has been a while since I was out to visit the plant. I was curious as to the progress of your designated areas or whatever.

MR. FITZPATRICK: Model spaces.

COMMISSIONER BERNTHAL: Model spaces for housekeeping. What is your schedule to extend that project throughout the plant? The second part of that question is housekeeping appearance is essential, of course, and you may have mentioned this, and if you did, I would appreciate your repeating or perhaps elaborating on the maintenance goals with respect to preventive maintenance versus required maintenance.

I'm just curious about this special program you have.

MR. FITZPATRICK: First of all, let me address the model spaces question. We have carried that forward since the time you were at the station. We have gone about it and approached it from let's get the guts of the plant done first. That is where we are going to get the biggest payoff, being able to decontaminate, for example. We have essentially completed all of the Unit I equipment cubicles and all of the Unit I areas adjacent to containment and all of the Unit I valve aisles, with minor exceptions.

The general areas in Unit I, in the auxiliary building, we have let go to last on purpose. I can do those and not unnecessarily expose people and still gain the benefits of being able to decontaminate in those areas we have done.

We have progressed very far along. We have the program scheduled out through the end of August at this point in time. We should by that time have all of the Unit I areas complete.

The additional areas listed for Unit II are by priority and we will attack those and schedule them as they come up.

In addition to the Unit I areas, I would like to say we have also prioritized the areas that are common to both units. Gas decay tank areas, for example, we have completed. The rad-waste evaporator areas that are common, we have completed. We have made significant progress across the board.

As far as PM goes, we feel we have a very viable PM program. We are aware of the concerns about maintenance across the industry. We of course are aware of the INPO guidelines. We review all of those guidelines and each of our stations is committed to a self evaluation. Those self evaluations have started. Braidwood's is scheduled to start on July 13th. Preventive maintenance will be one of the activities that is looked at during that evaluation.

COMMISSIONER BERNTHAL: Do you have a goal for how much of your maintenance effort, percentages have to be rough, I realize, how much of that effort and time devoted per year should be devoted to preventive versus required maintenance? Have you set a utility-wide goal or plant goal?

MR. FITZPATRICK: I don't know of any goal that has been set in that area.

COMMISSIONER BERNTHAL: 30 percent, 50 percent? I have heard 80 percent in some cases, which is surprisingly large. There are countries that do that.

MR. FITZPATRICK: If I had to render a guess, I would probably fall within the bracket you said; I would have said somewhere between 30 and 50 percent.

MR. REED: We have not set a goal. Interestingly, at Dresden, we are going to be one of the utilities where INPO makes a site visit to do a very detailed looking at Dresden's preventive maintenance. From that input and from looking at all of our plants, we will make any adjustments in our program that is needed. I can't hazard a guess as to what percentage will be PM.

COMMISSIONER BERNTHAL: Unrelated to this plant but I'm also a little concerned as you are, I'm sure, about what is going on at Dresden, do you have any preliminary analysis there of why they should have had this apparent slippage? Is it too soon to tell?

MR. REED: I think we were trying to do a lot of things at one time. One of the things about INPO when they come in, they want to see a station that is continually making progress. I must admit we had some long term equipment things that we were going to get around to doing, like replacing the

make up demineralizer and the heating system. I think INPO caught us in a period of time when we weren't going to do that because we had Unit III apart. They call them like they see them. They are a very good motivational force.

What it has caused us to do at Dresden is to do a lot more than we had originally intended to do. We are using the Byron Station as the example. Our paint up program is directed to get a station that is going to look like Byron. More important than painting is to improve the material condition of the station. That is one of the reasons we are focusing Engineering the way we are, to focus in directly on Dresden and Quad Cities and those problems.

COMMISSIONER BERNTHAL: The complaints were primarily fairly objective hardware things that they wanted to see done or thought were going to be done earlier and that had not been carried out yet? Is that a fair statement?

MR. REED: Yes. Three basic areas. One was chemistry. Our chemists were not inquisitive enough to follow abnormal chemistry results. The second is rad-protection.

COMMISSIONER BERNTHAL: Water chemistry?

MR. REED: Water chemistry. In rad-protection, they found too many evidences where people weren't following the rules. INPO will go out and stand at a step-off pad and stand there for three hours. They will count 70 people and see how many of them do their frisking properly.

The other thing they said that was maybe most profound was they felt the station management didn't get out in the plant enough and to set their standard as to what they wanted to happen.

It was a number of things that bothered them.

COMMISSIONER BERNTHAL: That was two plants ago, and not when I visited Braidwood, but I think when I was at Byron earlier, that I got a sense of your personal concern about the level of independence that each plant had. I think that is a problem that you, I trust, are long past. Nevertheless, here is a utility that is used to running a number of plants and by and large has done a competent job of doing that, and yet one plant seems to be a problem point.

Do you have any sense as to the reason why? Is it just that your energies have been focused and your personnel focused on the other plants? Why should that be?

MR. REED: I just cannot answer that question. It seems like in a plant's lifetime, they seem to cycle. At times the chemistry is not right.

COMMISSIONER BERNTHAL: This is not water chemistry.

MR. REED: No, this is the chemistry of the personnel. Dresden has gone through periods where it has performed quite well and then it will get a lot on its platter and do poorly. A part of where we are going with our organization here with attention to detail and our top managers

looking in great detail is we cannot allow that to happen again. Whether it is resources or whatever is needed, we think we are not going to let our plants fall below our standards for excellence.

COMMISSIONER BERNTHAL: Thank you very much.

CHAIRMAN ZECH: I have a question on the model spaces program. You commented briefly on it. I trust you are going to continue that program. Why don't you describe it a little bit for us. I'd like to hear your intentions to continue it. It does seem like an excellent program and one you have put a lot of attention into. Why don't you describe it a little bit? I would like to hear about your intentions for the future.

MR. FITZPATRICK: What we tried to do initially was come up with an objective model so we could show people what the standard was. It's very difficult to explain in words. We figured if we could take a space and clean it from the top to the bottom and paint it out from the top to the bottom, we could use it as an objective demonstration of what we expected the rest of the plant to look like.

We started with the make up demineralizer room, which is a difficult space to start with because you have a lot of acid and caustic skids in that particular space, and we did just that. We cleaned it from top from bottom, we painted it from the top to the bottom.

We used that as a demonstration. We took all our

plant people through that space, including the clerical people, and said, this is our standard at Braidwood Station and what we expect our spaces to look like. We expanded the program on a priority type basis, picked up additional spaces, and we are continuing to move in that direction.

Our intention is to in the enclosed spaces, make all of them look exactly like the first model space, which is an enclosed space. Some of the more wide open areas in the auxiliary building, of course, will be done all the way around, ceilings, walls and floor. In the turbine building, we won't go quite that extensive, we don't intend to paint the ceiling in our turbine building. There will be treatment done in the turbine building that will be very similar. The turbine building right now on two levels looks just like the model space, except not quite as extensive.

Our intent is to continue that effort throughout the plant.

CHAIRMAN ZECH: Good. One last question on Unit I and Unit II. You have different tasks being performed on both those units now. You mentioned earlier you figured you have the wherewithal and the management skills and experience capability to do that.

I would expect you to say that. I would just say it is a challenge. I hope you have enough personnel and you have looked at that rather carefully. With the power ascension of

Unit I and the pre-operational testing of Unit II, you are doing different things and you need different kinds of people. it is a challenge. I presume you have figured you have looked at that carefully and you are ready to meet it.

MR. FITZPATRICK: We have looked at that. We intend to continue to look at it. You can set out the best of schedules but that will have to be looked at on a day by day, shift by shift basis.

CHAIRMAN ZECH: Yes, you will have to watch it continuously. Any other questions from my fellow Commissioners?

COMMISSIONER BERNTHAL: I would just make one comment. I have mentioned the preventive maintenance thing. I would urge you to establish a goal, a fairly aggressive goal, for ratio of preventive maintenance. A number of utilities have done that. When I hear 80 percent, frankly, I'm surprised. When you think about 30 to 50 percent, that basically means you are going to wait for half the things to break. Based on what one sees in Japan and elsewhere and I know some of you have been to Japan and other countries and you know the vast majority of their effort is spent on preventive maintenance and it pays off.

It is just a thought. I thought this was a fairly commonly accepted theorem at this point. I don't want to over simplify it. It is sort of like changing florescent lights,

when you are in a big building, you do it all at once. You just do it because you don't want to wait for each one to burn out separately. That's an over simplification.

MR. REED: We will do that, Commissioner Bernthal. I will feed back to you what we think that goal is.

COMMISSIONER BERNTHAL: I think INPO has some general policy directions in that regard, although I am not familiar with them in detail.

CHAIRMAN ZECH: Anything else?

[No response.]

CHAIRMAN ZECH: Thank you very much. We appreciate it. We will ask the staff to come forward now, please.

[Pause.]

CHAIRMAN ZECH: Mr. Stello, you may proceed.

MR. STELLO: Thank you, Mr. Chairman.

I will introduce Tom Murley, the Director of NRR, and Bert Davis, our Region III Administrator, and they in turn will introduce other people who will be making the presentations.

There are two brief points that I think are important that I wanted to make at the outset. One is that we're here because we are now satisfied that all the requirements necessary for the issuance of the license have been met, and we're prepared to go forward.

But there's another point that I think is important, and it's one that the Commission was discussing a moment ago

with the Licensee that I wanted to also bring up, and that is to make sure that the Commission understands that we are fully aware that a number of plants at this facility will represent as -- I think the tenth in operation within the company, and that is a fairly substantial responsibility that we are -- and I will ask Bert later to identify some of the things that we will do to assure that all of those plants have an even and steady period of operation and that we can see that the trends are clearly there to improve.

But more significantly, we are going to be very careful to watch when we see indications that the experience that we s&w with Dresden, where they were backing off, and we are going to try to make sure that we can identify that early and bring that to the Licensee's attention to avoid periods of uneven operation for which they're clearly -- I think Mr. Reed correctly pointed out that that does happen, and I think the important thing is to recognize that it is happening and turn that around carefully.

I have asked Bert, who will later bring up some examples of some of the things that we are doing, and we spent a great deal of time concerning ourselves with that issue and will continue to do so in the future.

With that, I'll ask Tom Murley to begin.

MR. MURLEY: Yes. Jan Stevens, the Project Manager, will talk about the plant design and the licensing aspects, and

then Chuck Norelius from the Region will talk about construction and startup testing and progress.

I should say, I was out at the plant last week, and Bert and I spent the day walking around the plant with his staff and the Senior Resident Inspector, and so I've got some observations that I'd like to share at the end as well.

CHAIRMAN ZECH: Fine. Thank you.

MR. MURLEY: Jan?

MS. STEVENS: Good afternoon.

CHAIRMAN ZECH: Good afternoon.

MS. STEVENS: Commonwealth Edison is the owner and operator of Braidwood Station, as well as five other nuclear stations. Siting -- there is no unique siting features for this facility.

Could I have Slide 2, please?

[Slide.]

All the emergency planning onsite and offsite licensing requirements have been completed at this time. A full participation emergency exercise was conducted on November 6th of 1985. No deficiencies were identified during this exercise.

A partial emergency exercise was conducted on March 18th of this year. Two minor deficiencies were identified, and they have been subsequently resolved by FEMA.

COMMISSIONER ASSELSTINE: Who participated in the

partial exercise?

MS. STEVENS: It was full participation by the State of Indiana, partial by the State of Illinois, and several counties also participated.

COMMISSIONER ASSELSTINE: Okay. Thank you.

MS. STEVENS: The two deficiencies had to do with problems with the participation by Kankakee County.

Slide 3, please.

[Slide.]

Braidwood Station is a standard four-loop Westinghouse PWR. The architect engineer was Sargent & Lundy, and Commonwealth Edison served as the general contractor. It uses a Westinghouse nuclear steam supply system, which has a rated power of 3411 megawatt thermal. The containment consists of a reinforced concrete cylinder with a steel liner. It has sufficient free volume to preclude the need for any pressure suppression devices.

There are no unique design features for this facility, but it is important to note that it is a duplicate plant design with Byron Station, as has been noted previously.

The applications for the licenses for both Byron and Braidwood were filed under the standardization policy of 1978, specifically the duplicate plant option. The duplicate design features include the Westinghouse nuclear steam supply systems, the balance-of-plant systems, as well as associated auxiliary

systems.

The site-specific features include certain site-related characteristics, changes from the Byron Station design, and utility-oriented safety-related matters. The site-related characteristics include seismology, hydrology, meteorology, and certain foundation engineering issues. The changes from the Byron Station design include offsite power systems, just due to the different locations on the grid and the water systems due to the different sources of water. The essential service water and ultimate heat sinks are provided by a cooling pond for Braidwood Station versus cooling towers for Byron Station.

COMMISSIONER ASSELSTINE: As a practical matter, how much difference is there in terms of the hardware in the plant? Pretty much identical?

MS. STEVENS: Very identical. Like I said, the major difference is due to the different sources of water and the ultimate heat sinks and essential service water.

COMMISSIONER ASSELSTINE: Right.

MS. STEVENS: Slide 4.

[Slide.]

The evidentiary hearing was conducted for two separate contentions, emergency planning and harassment and intimidation. The hearings commenced on October 29, 1985 and were completed on November 26th of '86. Their official record was closed, then, on December 17th of '86.

The hearing for the emergency planning contention spanned three hearing days, and the QA contentions spanned a total of 97 hearing days.

The initial decision issued by the Board on emergency planning was issued on May 13th of this year, and the initial decision on the harassment and and other discrimination issue was issued on May 19th. The ASLB decision authorized issuance of the full-power license pending Commission approval.

A Notice of Appeal has been received by the Intervenors on June 1 concerning the ASLB decision on harassment and other discrimination.

The licensing milestones include the following. The construction permit was issued on December 31st of 1975. A zero power license was issued on October 17th of '86. This was a special license issued under 10 CFR 50.57(c) due to the impact of the hearing process on licensing.

Fuel loading was completed on November 3rd of '85. A low-power license was issued on May 21st of this year following the ASLB decision, and initial criticality was achieved on May 29th.

Slide 5, please.

[Slide.]

There are two exemptions noted in the license for Braidwood Station. One concerns a criticality alarm system, and the other concerns the containment airlock testing. Both

of these are found in most licenses today.

The only plant-specific license condition concerns Reg Guide 1.97. The preliminary evaluation of this review has been submitted, and a final report will be submitted within six months of our approval of the DCRDR report. It was tied to the DCRDR review.

Slide 6, please.

[Slide.]

There is a total of 1,341 personnel at the station. The operators are on 8 hour shifts with a total of 6 crews. The shift composition is as noted in the table. You will notice that actual staffing exceeds the tech spec requirements in each case. There are a total of 63 licensed operators. As I note on the slide, the Braidwood operating experience is enhanced by individuals who have actual operating experience at Byron. The Byron shift advisors, which were required on Byron Unit I, are being used at Braidwood, although they are not required at Braidwood.

Also some of the Braidwood operators actually received their hot functional testing at the Byron site as well as the Zion site. One of the shift foremen at Braidwood was formerly a SCRE at Byron.

COMMISSIONER ASSELSTINE: They have at least an SRO with the sufficient hot operating experience and then they are using the advisors as well?

MS. STEVENS: That's right; voluntarily. At least one per shift at this time.

COMMISSIONER BERNTHAL: How often do they rotate shifts as a matter of curiosity? Is it sort of a standard two weeks or weekly?

MS. STEVENS: I'm not sure I can answer that. I know they have two crews on each of the day shifts and one in the evening shift and then they have one that is always in training.

CHAIRMAN ZECH: We can ask the licensee.

MR. MURLEY: We have our Senior Resident Inspector, too.

MR. FITZPATRICK: Essentially rotation is on a weekly basis.

CHAIRMAN ZECH: Thank you.

MS. STEVENS: At this time, Bert Davis and Chuck Norelius will continue the discussion.

CHAIRMAN ZECH: Thank you very much.

MR. NORELIUS: I would like to introduce a couple other Region III people before I start. Bill Little is the Director of our Braidwood Project. Tom Tongue is the Senior Resident for Operations. Wayne Kropp is the Senior Resident for Construction.

CHAIRMAN ZECH: Thank you.

[Slide.]

MR. NORELIUS: To give a little bit of the construction history at the Braidwood site, Braidwood essentially began their construction in about 1975. There was a work stoppage in late 1979/1980, which I think may have contributed to some of the problems that came up after that. Any time you have a stoppage, there is a discontinuity in records. Re-staffing is a problem. I think that may have contributed to some of the problems we found in early 1982.

At that time, deficiencies were discovered in that written and approved procedures had not been used for the installation and inspection of major safety related mechanical equipment. That was an issue for which we issued a civil penalty of $100,000 and that at this point has been the only escalated enforcement action taken at the Braidwood site.

The company did develop a rather comprehensive program of corrective action for that particular issue at that time.

In 1983 and 1984, we identified other construction deficiencies. I guess the most significant one had to do with the question of the verification of whether correct material was used for piping. That again resulted in a substantial corrective action program, including inspection by the National Board of Boiler and Pressure Vessels and a number of things the utility did.

At the conclusion of that, we decided that the

hardware problems were not really that substantial. We did not issue an escalated enforcement action when all was said and done.

The company did develop a multitude of corrective action programs during that time to address all of the problems that had been identified by us and their own QA organization.

We conducted some major inspections, the construction appraisal team, conducted by the Office of Inspection and Enforcement, in late 1984 and 1985. While they found several individual violations, they concluded there was not a programmatic type of breakdown that related to construction.

We had the NE VAN which was there in the Spring of 1984 and again while they found a few violations, they were basically satisfied with the results of their findings as well.

The independent design review was done a little differently at the Braidwood site. We had performed an independent design inspection at Byron, a duplicate site, and an independent design review by a contractor who looked also at Byron and separately at Clinton, which has the same architect engineers, Sargent & Lundy. For the Braidwood station, they took all of the problems that were identified in these other inspections and submitted to us a plan for addressing the corrective actions and then a team went out from Headquarters to assure they had taken the corrective actions. That is the way that area was handled at the Braidwood site. We were

satisfied with their actions.

The major action undertaken by the utility to give added assurance as to the adequacy of construction was the BCAP program, Braidwood construction assessment program. They commented generally on what it involved. I might just elaborate a little more.

There were three basic elements to that program. One was to go back and inspect a sample of completed work to assure that past work had been done properly. The second was to review procedures of all the contractors they had on-site, to assure they had in them the appropriate design specifications. That was more forward looking, to assure that work from that point on would be done properly. Third, they reviewed a sample of the major corrective action programs that they had ongoing separate from BCAP, to give it an overview, to assure those programs would in fact correct the problems and lead to a proper conclusion.

That program was carried out by inspectors who had not been involved in the original work. It was performed under the Commonwealth Edison QA program. In addition, they had an independent overview committee, a group from a consultant, Evaluation Research Corporation, which independently overviewed that program.

As far as the Region is concerned, we assigned one full-time inspector to overview the BCAP program and he was on

that assignment for about one year. We also had specialist inspectors who reviewed the Sargent & Lundy resolution of deficiencies that were identified with that program, to assure we agreed with the resolution of those.

We also conducted monthly public meetings with the utility to review the results on an ongoing basis so we kept track of that. We felt that was a good program and did in fact satisfy the goal of giving added assurance that the construction at Braidwood was adequate.

With regard to allegations, since 1983 we've had about 68 total allegation files. Ten of those remain open. Five are open because of OI considerations, and one has to do with the Department of Labor. In all cases, we have looked at the technical details, the technical allegations that have been involved and have satisfied ourselves that there are no safety issues which remain open at this time.

Could I have the next slide?

[Slide.]

The preoperational startup testing has gone very well at Braidwood. They mentioned their schedule, and I would not reiterate the schedule, but just say that in our experience, I think it's probably the best we have seen in terms of setting out a schedule for the final year of operation and meeting that schedule. We think they did an excellent job in that area.

They also talked, I believe, about their dedicated

startup organization. Just a few points there. They had 30 people in that group. It was headed by an Assistant Superintendent with a Braidwood SRO license. We felt that this was positive in taking a lot of the burden off the operating and technical staff for planning related to startups. We thought that was very positive in that program.

We did give them a Category 1 rating in the pre-op testing area in our last SALP report.

Could I have the next slide, please.

[Slide.]

This is a summary of the last SALP report, and this was for the period of December 1985 through November of 1986. There were three areas where we gave them Category 1 ratings. I've already mentioned the pre-operational testing area. We also give them a 1 in operational readiness, and this was related to their planning for fuel loading and the actual loading of fuel that was involved. Their error-free operation plan that they had initiated early on, their scheduling, their control room decorum, if you will, the way they handle activities in the control room, we thought those were all positive indicators, and we gave them a Category 1 in that rating.

The other area had to do with the quality control and administrative controls, and that was basically given to them because of the management changes that they made to plan for

and carry out the multiple activities, and I believe they discussed most of those with you when they were up here, so I'll not repeat those.

COMMISSIONER BERNTHAL: Could I just focus on maybe one of those or two?

One would think with their large organization and capability -- for example, training and qualification ought to be 1 instead of a 2. Why is it a 2?

MR. NORELIUS: I believe at the time we looked into the pass rate of operators during that particular SALP period, and that was about at the national average at that point in time.

[Whereupon, at 3:10 o'clock, p.m., Commissioner Roberts left the hearing room.]

COMMISSIONER BERNTHAL: I see. So that was the predominant -- that's the predominant indicator that you use?

MR. NORELIUS: Well, we look at a number of things. We have looked at their aggressiveness in meeting the INPO schedule in terms of submittal. We tend to look at feedback that goes from how they handle events and how that gets fed back into the operating area or maintenance.

So in part, of course you're dealing with a time when the plant was not operating there, so in that area, we probably did not have a lot of data on which to base a judgment.

MR. DAVIS: The other thing that we consider more in

operating plants than this one is the personnel errors. That's another factor, in addition to those that Chuck said.

COMMISSIONER BERNTHAL: Let me pick one more. What about security? What does that mean? Why is that a 2 instead of a 1? Is that just based on the number of events that come through to the monitor or the duty officer or what?

MR. NORELIUS: Normally we would look at the organization as it's set up, the corporate security support, the site security group.

COMMISSIONER ASSELSTINE: Regulatory performance?

MR. NORELIUS: Yes, except again, at this point, before they have the license, they don't have a regulatory basis, so we tend to look at where there are weaknesses in staffing up. Just prior to the issuance of the license and shortly thereafter, Braidwood did have some security events, and there were some weaknesses that we had identified in the program.

COMMISSIONER BERNTHAL: One other question, a page back here, I guess, but is your broad judgment that this dedicated startup organization has been a great assist here? I would think so and hope so.

[Whereupon, at 3:12 o'clock, p.m., Commissioner Roberts reentered the hearing room.]

MR. NORELIUS: Yes. I think this was the first plant where we had seen that done that way. They also did another

thing in the construction side. They had appointed a Unit 1 Construction Manager and a Unit 2 Construction Manager, which seemed to give more organizational management attention to construction.

They also had a project startup -- project test group, which helped them -- and that was a separate group, and that helped them make the transition in getting systems from construction through pre-op testing to operations.

And so yes, we thought that this and their other organizations were rather innovative and positive.

COMMISSIONER CARR: What happens to the startup team after they're through starting up?

MR. NORELIUS: As I recall, they have moved -- they moved some people from the project organization, some they integrated into the plant, but some have gone over to work now on the Unit 2 startup. But beyond that, you may have to ask the utility.

CHAIRMAN ZECH: All right. Proceed.

MR. NORELIUS: We can go to the next slide, please.

[Slide.]

The fuel loading and initial criticality were handled very well at the Braidwood Station and really without any incident at all.

We did an operational readiness team inspection at the site during the first week of June, and we had seven

inspectors, including specialists from our office, and three Senior Resident Inspectors. We had the Senior Resident from Callaway and Byron, like plants, and also from the Kewaunee plant, which has had a good operating record. And the team looked at operations, maintenance, nuclear engineering, radiation protection and chemistry activities.

While they had some suggestions in areas that they gave to the plant to look at and follow up, the overall conclusion was that the plant was in really good shape and ready for getting a full-power license. They came away very pleased, and it was a rather positive report.

There have been no major LERs, Licensee Event Reports that have been issued. There were a couple that I might just mention that we followed, some during the period when they were waiting between getting the fuel in the pot and getting the reactor going.

At one point, the lost component cooling water which gave them a loss of the residual heat removal system, and this was caused by a problem with a valve that leaked by and an alarm that did not work at an appropriate level. That's been reviewed in terms of design concerns, as well as their corrective action, and we're satisfied with that at this time.

They had another one where they were doing some cleaning in the cable-spreading room over the reactor, over the control room, and water backed up and ran over and got some of

the instrumentation wet, and that was of some concern. And they took actions to modify their system for assuring that drains are unplugged that could affect control room operations.

Then another issue related to rocker arms in the diesel generators that exhibited some cracking. This came about because of -- there was a seizure of what they call crossheads in the diesels that caused the initial problem. Upon investigation, Cooper-Besmer indicated that some of the replacement rocker arms had a lower tensile strength and therefore may have caused some of that cracking or have contributed to it. And they had a couple of other failures that were unexplained later on.

We were involved in reviewing that, as was the Vendor Branch from Headquarters in Cooper-Besmer, and they replaced those that indicated cracking, and they then went back, and they have since done the 100-hour runs which were recommended by Cooper-Besmer. They were inspected after that time and found not to exhibit further cracking, and the vendor believes they are satisfactory. The utility is planning, however, to replace those with the lower tensile strength, and they have ordered those replacement parts. They just arrived onsite today, I believe, or late last week.

And so we will be following the replacement of those and make sure there is not any further problem with the diesel generators.

Subsequent to the criticality, I think there was one LER, one event that we thought had some significance. They had the main steam isolation valve, one of them, that was gagged shut while they were working on it, and the gag did not hold it shut, and it came open. This cleared an alarm in the control room which, although an operator recognized the change in condition, he talked to someone who had just been down in the area and had seen the gag on it and said, "That can't be, because it's gagged shut," and as a result, which I think is really a communications problem, they violated some of their limiting conditions for operation timewise.

And so that is an issue where we are still reviewing it and have not yet determined the appropriate enforcement action.

Overall, I don't think you can compare LERs to other plants because the time involved with this station has been so much different. As a generality, comparing it to Byron I, I would say I would think they are better than Byron Unit I was. They are not as good as Byron Unit II was. That might be expected with the new plant and with new people involved.

That is sort of how we would see their events.

Overall, with regard to Unit I, I would say that is in a higher state of operational readiness than any other plant I have seen in the last four or five years. I think it is ready to go. The time that they couldn't operate probably

helped them in a sense in getting a lot of backlog caught up and those things. We believe they are ready to go.

You expressed questions to them about how they were managing Unit I versus Unit II. They have described that program for you. The only thing I would add is we are aware of that concern also. We are planning augmented inspection coverage as soon as the license is approved and they begin their power ascension testing. This will include some around the clock coverage and after we do that for a few days, we will back down to something less than that, but where we will still cover all the shift turnovers for several more days until we feel comfortable they are doing that.

Our residents also have and will continue to attend their plan of the day meeting. If they think there is too much that is going on, they will feel free to raise that issue with the utility.

MR. DAVIS: Also, Chuck, I think we decided that if on the plan of the day meeting, we saw a lot of activity on Unit I and Unit II at the same time, we would go back onto the shifts.

MR. NORELIUS: Right.

MR. DAVIS: Vic asked me to say a few words on what we are going to be doing to try to make sure that the Commonwealth operating plants don't go back into sine waves or cycles as Mr. Reed said.

I guess there are a number of things. You are aware of the management meetings that Mr. Stello has, where we concentrate on the plants that need further attention. That will direct us towards performing additional inspections, not only regional inspections but NRC inspections at these plants in order to try to diagnose their problems and help to see that the problems get solved.

We also, of course, as you know, have reorganized from a regional perspective. I see quite a bit of attention on plants now from NRR, not only via telephone calls but by the presence of NRR people in the region and at the plants.

From the regional perspective, we are doing several things. With our workload on pre-operational testing of plants going down, it provides the management and the inspectors with more time to spend on operating plants. The rather large crew that we had in a section that was applied to pre-operational testing now can be put into monitoring operations. We are continuing something that we began a couple of years ago and I think probably it began mostly with Byron I, and that is to have periodic meetings at the branch chief level with plants, to review their performance and generally most of our plants have performance indicator books now that they publish monthly.

We plan to do that on a monthly basis, particularly with the new plants and those plants that are having problems. In addition, either Mr. Norelius or my Deputy Regional

Administrator or I intend to participate in those meetings quarterly, unless it is indicated more frequently, and there is one plant in the region now that I am planning to meet monthly on.

That is the type of thing we will do in order to try to make sure the plants don't go through adverse cycles.

CHAIRMAN ZECH: Do you have a conclusion to give us?

MR. STELLO: Mr. Murley is going to give that and he has some additional comments.

CHAIRMAN ZECH: Fine.

MR. MURLEY: I would mention that Bert and I kicked around the plant Saturday. There were some observations I would like to share.

We mentioned earlier and we have learned from experience that we can see good performance and poor performance within the same company. The key, I believe, is the station manager. Here, I'm satisfied that Mr. Fitzpatrick is setting the right tone for the plant. I think all the signs that we saw or I saw is he is on top of the activities at the plant, he is clearly following the details. He has given his staff the right kind of guidance, putting safety first and so forth. We sensed a positive attitude and they are responsive to NRC. I find the signs quite good.

Another indicator, which I will use because I think some of you have seen it when you were out at the plant, is a

device called a microelectronic surveillance and calibration unit, MESAC. It is a self contained unit that you can wheel up and plug into the cabinets to do surveillances. They have developed this. It goes well beyond our regulations. They are quite proud of what they have done. I think it is a good idea. I think it is clearly going to improve safety at that plant. It is something I would recommend be adopted overall.

Their experience is it cuts down surveillance testing time by about a factor of ten, from 1,000 hours to 200 hours a month, since there is no lifted leads and that sort of thing. There is much less opportunity for human error in surveillance testing. That is a thing that we find contributes to a number of events and accidents at plants.

COMMISSIONER BERNTHAL: If that is as good as you say it is, why doesn't everyone have one?

MR. MURLEY: Somebody has to do it first, I think. My understanding is that Westinghouse is developing it for sale. I suspect we will see it marketed. It is such a good idea that I can't imagine it won't get done. I wish we had the foresight to put it in our regulations.

I have one potential concern, and it has been mentioned. I will just reiterate it. Escalating power of Unit I, while they are in the last stages of pre-op testing and getting ready for start-up of Unit II, is going to be a challenging job. They intend to load fuel, as you probably

know, in December of this year. Keeping on top of that is a challenge for any one person. In fact, either the power escalation or the pre-op testing can demand full time of one individual.

As Bert said, we won't hesitate if we see anything developing to step in and make sure the operation of Unit I takes first priority.

Our conclusion is the licensee satisfies all requirements for the issuance of a full power license for Braidwood Unit I.

CHAIRMAN ZECH: Thank you very much. Any questions from my fellow Commissioners? Commissioner Roberts?

COMMISSIONER ROBERTS: No.

CHAIRMAN ZECH: Commissioner Asselstine?

COMMISSIONER ASSELSTINE: I guess one of the things I would like to do is get a sense both from you, Bert, and from you, Tom, as well, for your evaluation and assessment of Commonwealth's system-wide performance now. We talked a bit about this five months or so ago. I would be interested in your assessment of what the trends are and in particular, I would be interested in your evaluation of Dresden, where you think we stand now on Dresden.

MR. MURLEY: Let me mention from our perspective, we talked quite a bit about this in our management discussions. I get back to my emphasis on plant managers. I think from what I

have seen so far, a lot depends in the Commonwealth system on the plant manager himself, the station manager. They have a fair amount of autonomy. We see mixed results. I think we are going to be taking a look at Dresden pretty carefully. I don't know the causes there. I'm too new to it. Certainly, there are some problems there.

MR. DAVIS: I guess I could give you my perspective on the different plants. I will start with Dresden. Dresden's performance has not been good, as explained by Mr. Reed. They have made a number of changes in order to improve. Those changes include the changes from corporate management that Mr. Reed discussed as well as a number of changes at the plant. They have changed the plant manager. They switched the Assistant Superintendent of Operations and the Assistant Superintendent of Planning. They have brought in an Assistant Superintendent for Maintenance from Quad Cities. They have added a QC Supervisor, an INPO Coordinator, a new master mechanic and several others. They have made a number of changes at the plant. In addition to that, they have a number of corrective action programs that are underway.

With respect to improvement in performance, I guess my view is the jury is still out. I see improvements in housekeeping. I see improvements in radiation protection. I see the possibility of improvements based on these programs they have but I would rather wait and watch them before I make

a comment any further than that.

With respect to Quad Cities, it has been a good performer for the last couple of years. We have just mailed out a SALP report the other day that the company may or may not have received yet. It was a good SALP report. It had three Category 1's, in radiological control, surveillance and licensing activities and the rest Category 2. Quad Cities has not been a plant of concern to me lately.

Byron, you heard Mr. Reed talk about Byron. I think I would agree with most of what he said. Byron I got off to a poor start. The Region put a lot of attention on Byron I to help improve it. I think the performance on Byron II is a reflection of the success of turning that situation around.

LaSalle, we had major concerns with LaSalle a couple of years ago. We spent a lot of time with the company on LaSalle. In fact, Mr. O'Conner himself got involved. The last SALP that we wrote on LaSalle was very good. It showed major improvements.

LaSalle I still think bears watching, because although it showed major improvements, I sometimes think maybe our SALP ratings were influenced by the amount of improvement, rather than exactly where they are. So although I support the SALP ratings, I feel that we need to continue to watch LaSalle.

With respect to Zion, I spent a day at Zion here a couple of weeks ago with Mr. Reed and Mr. Maimon, Mr. Maimon

being the new Vice President there, and we toured the plant. The reason I did that was, in some meetings that my staff had had, these monthly meetings that I was talking about, why there were some concerns raised that I felt that I wanted to tour the plant with Mr. Reed and Mr. Maimon.

My view -- and I had been to LaSalle about a year before -- I'm sorry -- Zion about a year before. My general conclusion after the tour was that Zion had improved over what it was a year before, but the rate of improvement was not as I would like it to be. At the rate that I saw, it would take too many years to get it up to the point where it should be.

I think Mr. Maimon and Mr. Reed agreed with that, and I think they intend to try to increase the slope of improvement. So that's kind of my assessment of the plants.

COMMISSIONER ASSELSTINE: Okay. How about the regulatory performance, say, over the past six months or so? Any civil penalties; any major enforcement actions on the Commonwealth system?

MR. DAVIS: Well, we had a civil penalty at -- I can't remember the last -- we had one at Dresden for an uncontrolled heat-up with the containment open.

We had a civil penalty action at Byron probably more than six months ago, although I'm not sure, where they put a valve together improperly.

MR. NORELIUS: I think that was for an older issue.

The recent civil penalty issued at Byron was for an issue that occurred back maybe 18 months, a year to 18 months ago. There's been intervening correspondence back and forth. But the Dresden one is more recent.

COMMISSIONER ASSELSTINE: In terms of the management changes that Cordell Reed described, it sounds as if those are responsive to the kinds of concerns that we've had for some time, but I'd be interested in your assessment.

What do you think those are going to do? Do you view them as a positive change? Are they going to address some of the concerns that we've had about the overall system management over the past several years? Does it give you a higher comfort level in terms of the overall quality and depth of management attention that's going to be brought to bear to these operating plants?

MR. DAVIS: The answer is yes. I see this as an improvement. I saw the institution of the Division Vice Presidents that Mr. Reed talked about as an improvement, and I think they caused -- they've been in effect for awhile, and I think they have caused some improvements to occur at the plants.

In my judgment, the recent change that they made with Mr. Maimon, who I think has demonstrated success at Byron, and he's been certainly involved in the Braidwood successes lately, I think that's a good move, to have somebody of his caliber and

experience and demonstrated successes take over part of the plants. And then that allows a smaller number of plants to be under Mr. Gally. And I think it's a step in the right direction.

Now is it enough to have two people at that level with the total number of plants? I guess you have to wait and see. But I think it's an improvement.

COMMISSIONER ASSELSTINE: Just a couple of questions on the SER. In the fourth supplement, fire protection is listed as an open item. That's the last supplement in the draft, in the book.

Could you tell me what's still open on fire protection?

MS. STEVENS: It's listed as a license condition, and that's strictly referring to the generic license condition out of 8610.

COMMISSIONER ASSELSTINE: Okay.

MS. STEVENS: Some Project Managers do not list it as such, but I have it formally listed in my SER.

COMMISSIONER ASSELSTINE: Okay. And also on that supplement on page 6-1, there's some discussion of the atmospheric cleanup systems, and apparently the charcoal adsorber doesn't satisfy some of the ANSI standards.

How much are we giving up by not satisfying their original license commitment?

MS. STEVENS: I have asked Jack Hayes, my Technical Reviewer in this area, to be here today, thinking he might be able to address that.

COMMISSIONER ASSELSTINE: Great.

MS. STEVENS: Jack?

COMMISSIONER ASSELSTINE: I guess what I'm particularly interested in is how close to the 5 rem dose you get to, given the --

MR. HAYES: The charcoal adsorber system that is utilized is for the thyroid dose, and the major means of cleaning up the control room ventilation system is the emergency pressurization system, which is a four-inch deep bed system. The system which we're talking about here and referring to in the supplement is the recirculation charcoal adsorber, which was utilized to clean up the remaining portion, the recirculation air and any of the pressurization flow that was sent to the main control room.

So the emergency pressurization system still filters 99 percent of the incoming air, and the system which is on internal recirculation is still at the 90 percent level.

So what we were giving up is -- were the criteria for N-510 is plus or minus 20 percent, we're at around 30 to 34 -- well, it's less than 30 percent; it's 28 percent. So the residence time has increased a little bit from a quarter of a second to -- or decreased from a quarter of a second down to

.195, so it's a small decrease.

COMMISSIONER ASSELSTINE: Great. Thanks.

One last question on the SERs. This is a duplicate, as you pointed out.

MS. STEVENS: Yes, it is.

COMMISSIONER ASSELSTINE: For Byron. When I looked at the SERs, Byron is this much, and Braidwood is this much [indicating], pretty close.

MS. STEVENS: What you're missing is --

COMMISSIONER ASSELSTINE: What I'm wondering is, what did we gain from standardization here?

[Laughter.]

MS. STEVENS: What you're missing there is five additional supplements that were issued on Byron, and that's equally that same thickness.

COMMISSIONER ASSELSTINE: Okay. So we did gain something?

MS. STEVENS: We gained a tremendous amount. And that's not even indicative of the savings, because my initial SER on Braidwood heavily referenced the Byron SER up through Supplement 3. So you'll note on many pages in there, it just simply refers back to the Byron SER, "same as."

COMMISSIONER ASSELSTINE: Great.

MS. STEVENS: Okay. And then after issuance of my initial SER, it was deemed too difficult to cross-reference

between the later Byron supplements, and so in order to have a neat, stand-alone package, both the Byron Project Manager and myself duplicated many of the reviews from that point forward in each of our supplements.

But, indeed, there was tremendous savings.

COMMISSIONER ASSELSTINE: Good, good.

My last point, and I don't have any more questions, Lando; I have just a few comments on the plant.

CHAIRMAN ZECH: Go right ahead.

COMMISSIONER ASSELSTINE: Generally, I thought -- I'm pretty pleased with what I've heard about the testing and the startup performance of the plant so far. I was pleased when I visited the plant a few months ago at what I saw. I thought that the people were quite good, and I think I was particularly impressed with the site management team at this plant.

I agree with your comment, Tom, on this surveillance testing, this automated surveillance testing system. It's a neat idea, and it's something I think that a lot of other folks ought to pick up on, too. It really is a good way to tackle the big problem of surveillance testing errors throughout the industry. I think any time you can avoid having to go in those cabinets and lifting leads, you're much better off, and this system avoids that, and it just really seems to be an excellent idea.

I think it's particularly encouraging that the

company's -- the plant's staff took the initiative to develop this, and I think that's a good, positive sign.

MS. STEVENS: I might make a simple note that my Technical Reviewer happened to stop by my office this morning and specifically asked about this particular system, as he found out about it. He's very interested in discussing this with the utility and getting additional information.

COMMISSIONER ASSELSTINE: Yes, it's really a neat system.

MS. STEVENS: Yes, it really is.

COMMISSIONER ASSELSTINE: And an excellent idea.

I thought the appearance and the condition of the plant was quite good as well when I was out there, and I share the comments you made earlier, Lando, on the model space program. It's an excellent idea. It's a good, positive step forward, and it would be nice to get to the point where Dresden looks like the model spaces in Braidwood now.

Also, I have the same concern, Tom, that you expressed on the Unit 2 activities in Unit 1. It's quite clear that Unit 2 is moving along quite rapidly, and I think you're absolutely right to pay particular attention to the operation of Unit 1. That has to take priority, and I hope the company will take that to heart as well.

Whatever pressures there may be on Unit 2, the good operation of Unit 1 ought to take top priority. It really has

to.

Maintenance, I guess just one comment in response to Fred's earlier comment. It does seem to me that that scenario could use some additional attention in terms of looking at the role that preventive maintenance ought to play. And I guess I find it a little bit disturbing that the country's largest nuclear utility doesn't yet have a target or a goal on the role that preventive maintenance ought to play.

And I guess for myself, that's sort of a further indication that I think there's a continuing need for a stronger regulatory involvement in the maintenance issue.

In terms of the overall performance of the company in the nuclear system, I am pleased as well from what I heard from you, Bert, and also from the company. I have been tracking the performance of the Commonwealth plants. I think Byron really is doing well. The change is dramatic from what we saw a couple of years ago when that plant started up. The trends seem to be in the right direction for some of the other units, LaSalle as well, as another one I have been tracking.

I do think there is room for improvement at the older stations. I think there is considerable room for improvement at Dresden. I think my own gut reaction has been that for some time at least, the older existing operating plants didn't get as much attention within the Commonwealth system as they should have, particularly probably due to the large construction

program that was going on and the focus of attention on that.

I think in the past one of the comments we have made has been that at the corporate level, management has been a little thin in terms of numbers. There has been a need to beef that up. I'm encouraged by the management changes that have taken place earlier this month. As you said, Bert, it looks to me as that is responsive to the kinds of concerns we have raised in the past.

Maybe just one more note and then I will be quiet until we vote. I would just note that I voted for all of the Commonwealth plants up until this point, going back to LaSalle I, back to my first year on the Commission. Unfortunately, I am not going to be able to vote for this plant because of the Commission's handling of the quality assurance issues. In my mind, there were valid quality assurance issues that should have gone to hearing. The Licensing Board was prepared to go to hearing on them. The fact that the Commission foreclose those issues from litigation forces me to vote against the plant in this case. That is what I will be doing when we get to the vote.

I just wanted to give you my overall comments on the plant and on the condition of the plant and people and based upon the meeting today.

That is all I have to say.

CHAIRMAN ZECH: Commissioner Bernthal?

COMMISSIONER BERNTHAL: I would just make the comment that aside from the litigative procedural issue, I believe this will be Commissioner Asselstine's last meeting. He is more lavish with praise than perhaps he might be otherwise because we will have to live with the consequences.

[Laughter.]

COMMISSIONER BERNTHAL: In any case, for those of us who will still be here, we are sometimes more circumspect. I agree generally with the appraisal Jim has made of the utility and its progress. I think some of the utility management has gotten higher. There may be some others that say we really don't want them to be average because they are the biggest and they ought to be the best, in my judgment. They have resources to be the best. They are now drawing to the close of a construction program which will sap any entity, I think, or would sap any entity, even the biggest.

In the years shortly ahead, I would certainly hope and expect that they would also top the list on performance, not just in size.

With that, Mr. Chairman, I've had most of my questions answered at this point.

CHAIRMAN ZECH: Thank you. Commissioner Carr?

COMMISSIONER CARR: No comments, Mr. Chairman.

CHAIRMAN ZECH: Let me just make one brief comment on Commissioner Asselstine's last comment on the procedural

concern that he has had. As far as I am concerned, the Commission proceeded responsibly and deliberately and carefully and exercised our legal and policy responsibilities on this issue. There were a number of things that had to be looked at very carefully. I think we did that. I think we acted responsibly.

There were errors made by various groups as I recall the issue. The majority of us felt we wanted to do the right thing and we looked at it carefully and I believe we did the right thing. I would just like to get that down in the record.

Having said that, it is Commissioner Asselstine's last meeting with us on this Commission. No matter how he votes in a minute or two, I would just like to thank him on behalf of all of his colleagues for his service to our country. He has disagreed with us on a number of occasions but I think we have agreed on a number of occasions, too, and probably more than we have disagreed. I would just like to let Commissioner Asselstine know that we all appreciate serving our country with you and we wish you the very best.

COMMISSIONER ASSELSTINE: Thank you, Lando.

COMMISSIONER BERNTHAL: May I just also say to Jim, your insight and scholarship on the issues and vigorous contributions and debates will be missed.

COMMISSIONER ASSELSTINE: Thanks, Fred.

CHAIRMAN ZECH: If I may thank the Commonwealth

Edison Company for their presentation today and the NRC staff for their presentation also.

If I could just summarize very briefly, I believe they have both told us that they believe that upon successful completion of the remaining low power testing, the Braidwood Unit I will have satisfied the requirements for issuance of a full power license.

I would like to ask if my fellow Commissioners are ready to vote at this time.

[Commissioners responded affirmatively.]

CHAIRMAN ZECH: If so, those in favor of issuing an order which discusses the process of the immediate effectiveness review and declares that the Commission has examined the relevant safety findings in the Licensing Board decisions and has decided not to stay the effectiveness of those decisions, and those in favor of authorizing the staff to grant Commonwealth Edison Company a full power operating license for Braidwood Unit I, please signify by saying aye.

COMMISSIONER BERNTHAL: Aye.

COMMISSIONER ROBERTS: Aye.

COMMISSIONER CARR: Aye.

CHAIRMAN ZECH: Aye.

Opposed?

COMMISSIONER ASSELSTINE: No.

CHAIRMAN ZECH: The vote is 4 to 1 in favor. The

meeting is adjourned.

[Whereupon, at 3:50 p.m., the meeting was adjourned.]

REPORTER'S CERTIFICATE

This is to certify that the attached events of a meeting of the U.S. Nuclear Regulatory Commission entitled:

TITLE OF MEETING: Discussion/Possible Vote on Full Power Operating License for Braidwood-1
PLACE OF MEETING: Washington, D.C.
DATE OF MEETING: Tuesday, June 30, 1987

were held as herein appears, and that this is the original transcript thereof for the file of the Commission taken stenographically by me, thereafter reduced to typewriting by me or under the direction of the court reporting company, and that the transcript is a true and accurate record of the foregoing events.

Ann Riley

Ann Riley & Associates, Ltd.

6/30/87

SCHEDULING NOTES

TITLE: DISCUSSION/POSSIBLE VOTE ON FULL POWER OPERATING LICENSE FOR BRAIDWOOD-1

SCHEDULED: 2:00 P.M., TUESDAY, JUNE 30, 1987 (OPEN)

DURATION: APPROX 1-1/2 HRS

PARTICIPANTS:

COMMONWEALTH EDISON — 20 MINS

- JAMES T. O'CONNER
  CHAIRMAN OF THE BOARD AND
  PRESIDENT

- EUGENE E. FITZPATRICK
  STATION MANAGER

NRR — 15 MINS

- THOMAS MURLEY
- DENNIS CRUTCHFIELD
- JANICE STEVENS

REGION III — 15 MINS

- A. BERT DAVIS
- CHARLES NORELIUS

COMMISSION BRIEFING

ON THE

FULL POWER LICENSING

OF

BRAIDWOOD STATION, UNIT 1

JUNE 30, 1987

JANICE A. STEVENS
PROJECT MANAGER
X24993

PRESENTATION OUTLINE

- BACKGROUND
- PLANT DESIGN
- HEARING/LICENSING MILESTONES
- LICENSE STATUS
- ORGANIZATION/STAFFING
- CONSTRUCTION HISTORY
- PREOPERATIONAL/STARTUP TESTING
- SALP 6 RESULTS
- OPERATIONAL READINESS ASSESSMENT
- CONCLUSION

SLIDE 1

BACKGROUND

- OWNER AND OPERATOR
  - COMMONWEALTH EDISON COMPANY
- EXPERIENCE
  - OWN AND OPERATE FIVE OTHER NUCLEAR STATIONS
- SITING
  - LOCATION: NORTHEASTERN ILLINOIS, 60 MILES S.W. OF CHICAGO
  - POPULATION (1980):
    NEAREST TOWN: BRAIDWOOD, ILLINOIS (1 MILE) - 3,429
    NEAREST POPULATION CENTER: JOLIET, ILLINOIS (20 MILES) - 77,956
  - EMERGENCY PLANNING:
    ONSITE AND OFFSITE LICENSING REQUIREMENTS COMPLETED
    FULL PARTICIPATION EMERGENCY EXERCISE - NOVEMBER 6, 1985
    ANNUAL EMERGENCY EXERCISE (PARTIAL) - MARCH 18, 1987

PLANT DESIGN

- GENERAL
  - WESTINGHOUSE PWR (4 LOOP RCS)
  - ARCHITECT/ENGINEER: SARGENT AND LUNDY
  - GENERAL CONTRACTOR: COMMONWEALTH EDISON
- NSSS CHARACTERISTICS
  - RATED POWER: 3411 MWT, 1120 MWE
- CONTAINMENT CHARACTERISTICS
  - STEEL-LINED REINFORCED CONCRETE
  - FREE VOLUME: 2,700,000 CU. FT.
- DUPLICATE PLANT DESIGN (BYRON/BRAIDWOOD)
  - DUPLICATE DESIGN FEATURES:
    - NUCLEAR STEAM SUPPLY SYSTEMS
    - BALANCE OF PLANT SYSTEMS
    - ASSOCIATED AUXILIARY SYSTEMS
  - SITE-SPECIFIC FEATURES:
    - SITE-RELATED CHARACTERISTICS
    - CHANGES FROM THE BYRON STATION DESIGN
    - UTILITY-ORIENTED SAFETY-RELATED MATTERS

HEARING/LICENSING MILESTONES

- OL EVIDENTIARY HEARING
  - COMMENCED — OCTOBER 29, 1985
  - COMPLETED — NOVEMBER 26, 1986
  - RECORD CLOSED — DECEMBER 17, 1986
  - INITIAL DECISION ON EMERGENCY PLANNING — MAY 13, 1987
  - INITIAL DECISION ON HARASSMENT AND OTHER DISCRIMINATION — MAY 19, 1987
  - ASLB DECISION AUTHORIZED ISSUANCE OF FULL POWER LICENSE PENDING COMMISSION APPROVAL
  - NOTICE OF APPEAL BY INTERVENORS OF THE ASLB DECISION CONCERNING HARASSMENT AND OTHER DISCRIMINATION — JUNE 1, 1987

- LICENSING
  - CONSTRUCTION PERMIT — DECEMBER 31, 1975
  - ZERO POWER LICENSE — OCTOBER 17, 1986
  - FUEL LOADING — NOVEMBER 3, 1986
  - LOW POWER LICENSE — MAY 21, 1987
  - INITIAL CRITICALITY — MAY 29, 1987

LICENSE STATUS

- EXEMPTIONS
  - CRITICALITY ALARM SYSTEM (10 CFR 70.24)
  - CONTAINMENT AIR LOCK TESTING (10 CFR 50 APPENDIX J)

- PLANT SPECIFIC LICENSE CONDITION
  - REGULATORY GUIDE 1.97

ORGANIZATION/STAFFING

- ORGANIZATION
  - TOTAL STATION MANPOWER: 1341

- STAFFING
  - SHIFT ROTATION: 8 HOUR SHIFTS, 6 CREWS
  - SHIFT COMPOSITION:

	TECH. SPEC. REQUIRE. (BOTH UNITS OPERATING)	ACTUAL DAY	ACTUAL NIGHT
SHIFT ENGINEER (SRO)	1	2	1
SHIFT FOREMAN (SRO)	1	4	2
SCRE (WITH DEGREE)	1	2	1
CONTROL OPERATOR (RO)	3	6	3
AUX. OPERATOR (NON-LICENSED)	3	18	9

  - TOTAL LICENSED OPERATORS: 43 SROs, 20 ROs
  - BRAIDWOOD OPERATING EXPERIENCE ENHANCED BY INDIVIDUALS WITH OPERATING EXPERIENCE AT BYRON

CONSTRUCTION HISTORY

- SIGNIFICANT CONSTRUCTION DEFICIENCIES

  1982 - INSTALLATION AND INSPECTION OF MECHANICAL EQUIPMENT

  1983 - MATERIAL TRACEABILITY, HVAC WELDING, SMALL BORE PIPING

- MAJOR INSPECTIONS

  CONSTRUCTION APPRAISAL TEAM (CAT)

  NONDESTRUCTIVE EXAMINATION (NDE) VAN

  INDEPENDENT DESIGN REVIEW

- BRAIDWOOD CONSTRUCTION ASSESSMENT PROGRAM (BCAP)

- ALLEGATIONS

PREOPERATIONAL/STARTUP TESTING

- TESTING CONDUCTED ON SCHEDULE
- DEDICATED STARTUP ORGANIZATION
  - TAKES PLANNING/SCHEDULING BURDEN OFF OPERATING AND TECHNICAL STAFF
  - UNIQUE TO BRAIDWOOD
  - CONSISTENT WITH LESSONS LEARNED APPROACH
  - 30 PERSON GROUP HEADED BY ASSISTANT SUPERINTENDENT WITH BRAIDWOOD SRO LICENSE
- PREOP TESTING CAT 1 IN SALP 6

SALP 6 RESULTS

FUNCTIONAL AREA	RATING
CONSTRUCTION	2
OPERATIONAL READINESS AND INITIAL FUEL LOADING	1
RADIOLOGICAL CONTROLS	2
PREOPERATIONAL TESTING	1
FIRE PROTECTION	2
EMERGENCY PREPAREDNESS	2
SECURITY	2
QUALITY PROGRAMS AND ADMINISTRATIVE CONTROLS AFFECTING QUALITY	1
LICENSING ACTIVITIES	2
TRAINING AND QUALIFICATION EFFECTIVENESS	2

OPERATIONAL READINESS ASSESSMENT

- FUEL LOADING AND INITIAL CRITICALITY HANDLED WELL
- TEAM INSPECTION CONFIRMED OPERATIONAL READINESS
- LERs - NO MAJOR EVENTS

CONCLUSION

THE STAFF CONCLUDES THAT THE LICENSEE SATISFIES ALL REQUIREMENTS FOR ISSUANCE OF A FULL POWER LICENSE FOR BRAIDWOOD STATION, UNIT 1.

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Meeting Title: Discussion/ Possible Vote on Full Power Operating License for Braidwood-1

Meeting Date: 6/30/87 Open X Closed _____

Item Description*:	Copies Advanced to PDR	DCS Copy
1. TRANSCRIPT w/ Scheduling Notes; Viewgraphs	1	1
2.	____	____
3.	____	____
4.	____	____
5.	____	____
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