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UNITED STATES ATOMIC ENERGY COMMISSION

IN THE MATTER OF:

: Docket No. 50-313

ARKANSAS POWER AND LIGHT COMPANY

PRE-MEARING CONFERENCE

Place - Washington, D. C.

Date - October 15, 1968

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BEFORE THE

ATOMIC ENERGY COMMISSION

In the Matter of:

: Docket No. 50-313

ARKANSAS POWER AND LIGHT COMPANY

Room 115 811 Vermont Ave. N. W. Washington, D. C.

The pre-hearing conference came on for hearing,

pursuant to notice, at 2:15 p.m.

BEFORE:

ALGIE A. WELLS, Chairman DR. LAWRENCE R. QUARLES, Member R. B. BRIGGS, Member

ALTERNATE MEMBERS - PRESENT:

J. D. BOND, Chairman DR. JOHN GEYER, Member

APPEARANCES:

W. HOPACE JEWELL, ESQ., and PHILIP K. LYON, ESQ., of House, Holmes & Jewell, 1550 Tower Building, Little Rock, Arkansas 72201 and

ROY B. SNAPP, ESQ., 1725 K Street, N. W., Washington, D. C. 20006, on behalf of the Applicant.

THOMAS F. ENGELHARDT, ESQ., Regulatory Staff, Atomic Energy Commission.

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PROCEEDINGS

CHAIRMAN WELLS: This is a pre-hearing conference that is scheduled in accordance with the Notice of Hearing. It pertains to an application by Arkansas Power and Light Company for a construction permit for a pressurized water reactor to be located at a site in Pope County near Russellville, Arkansas.

We are convened at the place designated in the Notice of Hearing, we are about 10 or 15 minutes after the time designated but I think it is close enough. The date is October 15th as prescribed in the Notice of Hearing. On October 30th in Russellville there will be a hearing conducted in this matter. This is only a conference designed for the purpose of identifying the issues and settling procedural matters.

This Board is composed of Dr. Lawrence Quarels, on my right, and Mr. Beecher Briggs, on my left. My name is Algie Wells and I have been designated Chairman of the Board.

Dr. John Geyer has been designated as a technically qualified alternate of the Board and Mr. J. D. Bond has been designated alternate Chairman of the Board. Both Mr. Bond and Mr. Geyer are with us this afternoon, but unfortunately there is not room up here for them. I see them. sitting in the back of the room.

As alternates, Dr. Geyer and Mr. Bond will participate

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with the Board in the discussion of matters pertaining to the preparation for the hearing. They will not participate in making decisions unless they should become members of the Board in accordance with the applicable rules and regulations.

College of Engineering at the University of Virginia and Mr. Briggs is Director of the Molten Salt Reactor Program at Oak Ridge, I think I can dispense at this conference with the customary statement on the background of the Board members, as I believe these gentlemen are well-known to you.

Dr. Geyer and Mr. Bond are also well-known.

Dr. Geyer is the Chiarman of the Department of Sanitary Engineering and Water Research at Johns Hopkins University and

Mr. Bond is a Hearing Examiner with a long and distinguished career, who is presently assigned to the U.S. Atomic Energy Commission.

Copies of the Notice of Hearing which I have mentioned earlier are available if any of you would like to have a copy so that you can follow the proceedings with perhaps a little more interest.

marily a procedural one. We will not take evidence as such. The main reason for us being here this afternoon is to settle procedural problems, exchange testimony between the parties -- I think we only have two parties -- identify

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witnesses and identify principal substantive matters that will be discussed at the hearing.

Mrs. Barther is our Reporter and we would like for you to feel free to interrupt us, Mrs. Barther, whenever you feel it is necessary to understand anything that is said.

The Applicant, Arkansas Power and Light Company, h made timely answer to the Notice of Hearing and the Board has received notification of the appearance of Mr. Horace Jewell, Mr. Edward B. Dillon, Jr., Mr. Philip K. Lyon, and Mr. Roy B. Snapp on behalf of the Applicant.

Mr. Jewell, perhaps you would introduce yourself and your colleagues, so that the record will show your presence.

MR. JEWELL: I am Horace Jewell. On my right is Mr. Philip Lyon. Both of us are from Little Rock. And on my left is Mr. Roy Snapp of Washington. And we are here today representing the applicant.

CHAIRMAN WELLS: Thank you very much.

of Mr. Thomas F. Engelhardt on behalf of the Regulatory Staff of the Atomic Energy Commission.

Mr. Engelhardt, perhaps you would introduce yourself and your colleagues for the purposes of the record.

MR. ENGELHARDT: I am Thomas F. Engelhardt and I represent the Atomic Energy Commission's Regulatory Staff.

To my left is Mr. Neil Newman, who will be assisting

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me during the course of these proceedings, although Mr. Newman is not admitted to the bar as yet. He will shortly be so admitted and until such time he will not file with the Board a notice of official appearance in this proceeding.

To my right is Mr. Charles Long and to his right is Mr. Albert Schwencer, both of whom will be the staff's principal technical witnesses at the forthcoming hearing.

CHAIRMAN WELLS: Thank you, Mr. Engelhardt.

I believe I can say that in addition to representing the Regulatory Staff, Mr. Engelhardt and his colleagues are prepared to assist the members of the public who may wish to consult with them concerning the regulations and procedures applicable to this conference and the hearing which we will hold in ku-e-llville. They will I am sure be glad to give any assistance desired, if the members of the public can contact them at the appropriate time.

The Board is not informed of any request to intervone in these proceedings. The Notice of Hearing prescribed
the request for intervention be submitted not later than
October 10th. If there is anyone present who desires to intervene and can show good cause for not submitting his petition
within the prescribed time, we will be glad to consider the
request.

(No response.)

CHAIRMAN WELLS: The record will please show there

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was no such request made.

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We have on the other hand received three requests from persons who would like to make limited appearances. One is from Mr. E. F. Wilson, Director, Division of Radiological Health of the Arkansas State Board of Health.

I wonder if by chance Dr. Wilson is here this afternoon?

MR. JEWELL: He is not, Mr. Chairman.

CHAIRMAN WELLS: Thank you, Mr. Jewell.

The Board has informed Mr. Wilson that he would be permitted to make a limited appearance on October 30th.

In addition, the Board has received a request from Dr. Howard K. Suzuki, Professor at the University of Arkansas Medical Center in Little Rock. This request was only received either yesterday or today. If I hear no objection from the parties, the Board will inform Dr. Suzuki that he will be permitted to make a limited appearance.

(No response.)

CHAIRMAN WELLS: Hearing no objection, we will so inform Dr. Suzuki.

We received another request for limited appearance from Mr. S. Ladd Davies, Director of the Arkansas Pollution Control Commission. If there is no objection the Board would propose to inform Mr. Davies he would be permitted to make a limited appearance.

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MR. ENGELHARDT: Mr. Chairman, I notice in Mr. Davies'
letter, his last sentence indicates that his statement will
be confined to thermal and chemical aspects only, since the
radiological aspects are under the jurisdiction of the Arkansas
State Health Department. This statement is not entirely accurate, and it also indicates that this individual will be
speaking in connection with matters which the Atomic Energy
Commission has no direct jurisdiction over at this time.

Would it be the intent of the Chairman in responding to this request to indicate to Mr. Davies the extent of
this Board's jurisdiction in order to provide him with some,
well, what shall we say, to, one might say, straighten him
out on exactly what it is that this hearing is to consider and
the scope of the Commission's jurisdiction?

CHAIRMAN WELLS: Well, it might be worthwhile. I was just wondering. I'm not sure the Board would want to do this in our brief letter. I might refer to the regulations.

At the time of the hearing I think it would be appropriate for the Board to inform him what are the limits of our jurisdiction.

MR. ENGELHAPDT: I think it would be appropriate for him, since he does seem to be a little confused on who has jurisdiction in various matters, to provide that back-ground and if the Board so desires, at the time limited appearances are called at the hearing, I would be happy to make

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such a statement if the Board does not choose to make such a statement.

CHAIRMAN WELLS: Thank you. You might even find it useful if you could seek him out on the morning so he would know beforehand. My suspicion is that there will be no difficulty with this. I don't suppose he is going to want to wander too far afield.

MR. ENGELHARDT: With that comment, I have no objection to the Board's admitting this individual as a limited appearee.

CHAIRMAN WELLS: Thank you.

Does the applicant have any comment on that?

MR. JEWELL: The applicant has no objection to a limited appearance by Mr. Davies.

CHAIRMAN WELLS: Good. Then I believe that takes care of that.

I would like to acknowledge and express the Board's appreciation to Staff Counsel for taking the initiative in developing a proposed agenda for this afternoon's meeting. It has been submitted, if I understand correctly, Mr. Engelhardt, with the concurrence of your colleage, the Applicant's Counsel?

MR. JEWELL: That's right.

CHAIRMAN WELLS: If you have enough copies of the agenda, you might wish to let any person who is interested in

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the agenda have a copy so they can follow it as we discuss it.

MR. ENGELHARDT: May I inquire if all of the Board members have copies, in which case we will just pass the rest of them out to the rear of the room and they will be available.

CHAIRMAN WELLS: I believe we have already covered Items 1 and 2 of the proposed agenda. We come next to the procedural items.

3-A of the proposed agenda again brings us to another proposed agenda and this is the agenda for the hearing. Before we came over this afternoon, the Board had an opportunity to go over this suggested agenda. We think it is a very good one. Again, thank you for it.

I am rather inclined to think, however, that the adoption of this agenda ought to be the adoption of an agenda for a guide rather than something that we would rigidly follow, because for one reason or another it might be desirable to modify it.

MR. ENGELHARDT: It certainly was the intention of the staff in submitting this to the Board to have it considered as such, as a guide, subject to change by agreement of the Board and parties during the course of the hearing.

CUAIRMAN WELLS: Good. Thank you very much.

MR. ENGELHARDT: I have additional copies of this proposed agenda. Would there be any useful purpose served

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here in "istributing copies to those in this room or shall we reserve on that until the hearing?

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CHAIRMAN WELLS: I am inclined to think it would be better to keep such copies as you have for the hearing. If we should have a number of people there, they might like to read it.

MR. ENGELMARDT: We will have a number of copies of the agenda available for public distribution at the hearing.

CHAIRMAN WELLS: Good, thank you.

The next item on the agenda is the method of introducing testimony and exhibits.

Would the staff counsel or would the applicant like to speak to this item?

MR. JEWELL: The applicant, Mr. Chairman, proposes of course to introduce its summary description of the unit as an exhibit and as its primary testimony in the case.

We would propose to have the summary sponsored by Mr. Harlan Holmes, who is the nuclear project manager for Arkansas Power and Light Company.

CHAIRMAN WELLS: Mr. Jewell, pardon me, I get the impression that you are not being heard in the last row. Even though it is a small room, our public address system is not working. Could you speak a little louder, please?

MR. JEWELL: Mr. Holmes will also be the chief witness for the applicant for answers to the questions of the Board which may be presented this afternoon to us.

In addition to that, the applicant proposes to have

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Mr. A. B. Cohen, the Vice President, Secretary and Treasurer testimony as to the financial ability of the company and its technical qualifications. This is the proposed testimony of the applicant.

CHAIRMAN WELLS: Mr. Engelhardt, do you wish to add anything?

MR. ENGELHARDT: Yes, sir. The principal staff technical witnesses will be Mr. Charles Long and Mr. Albert Schwencer.

There may be additional witnesses added to this group who will be identified at the hearing. But at this time it is intended that Mr. Long and Mr. Schwencer will be our principal witnesses with respect to the technical matters related to this evaluation of the application.

In addition, the Regulatory Staff proposes to offer testimony of Mr. Charles A. Lovejoy of the Office of Comptroller of the Atomic Energy Commission who will testify with respect to the technical qualifications of the applicant.

I might say at this time that the staff is prepared to distribute to the Board and to the parties a statement of professional qualifications of Mr. Long and Mr. Schwencer and the prepared testimony of Mr. Charles A. Lovejoy with respect to the financial qualification of the applicant. And if the Board so desires, I am prepared n / to ask Mr. Newman to distribute these copies.

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Additional copies of this testimony will be forwarded to the public officials of the State of Arkansas, so that their records will be complete prior to the commencement of the hearing.

CHAIRMAN WELLS: All right. You may distribute those at this time.

MR. ENGELHARDT: While Mr. Newman is distributing these documents, I might also add that the staff intends to introduce its principal evidence with respect to the evaluation of this application in the form of a staff safety evaluation which has previously been distributed to the Board and to the parties. This staff safety evaluation was transmitted to the Board under cover of a letter from the staff counsel dated October 1, 1968.

The testimony of Mr. Lovejoy which you have just received has been prepared by Mr. Lovejoy and an affidavit to that effect has been prepared and if it is agreeable with the Board and with counsel for the applicant, I would like to request that Mr. Lovejoy's testimony in this proceeding be stipulated and accepted into the record of the transcript of the hearing as if read without Mr. Lovejoy's presence at the hearing. The affidavit would provide the appropriate sponsorship and authentication of that testimony of Mr. Lovejoy.

CHAIRMAN WELLS: Mr. Engelhardt, anticipating that this proposal might be made as it has been made in most of the

cases, the Board has consulted on this and we see no reason why Mr. Lovejoy should appear. I think we ought to read this testimony, though, and perhaps let you know by the end of this conference whether or not that is still our opinion.

MR. ENGELHARDT: I think if we can receive information within a week or so that the Board has no questions to
ask of Mr. Lovejoy, that will be a sufficient time, so if the
Board does desire Mr. Lovejoy's presence, appropriate travel
arrangements can be made for his appearance at the hearing.

CHAIRMAN WELLS: Good.

MR. ENGELHARDT: The final matter I might mention with respect to staff exhibits, the staff would propose to offer two exhibits at the Paring, Starf Exhibit 1 would consist of a statement of the professional qualifications of the members of the Advisory Committee on Paactor Safeguards, and Staff Exhibit 2 would provide the professional qualifications of the principal members of the Regulatory Staff who participated in the evaluation of the application.

That, I believe, would constitute the Regulatory Staff's case in this proceeding.

CHAIRMAN WELLS: Thank you.

If I understand correctly, what you and Mr. Jewell have said, you have covered item 3-b and 3-c.

MR. ENGELHARDT: There is one pending matter which I neglected, and that is the matter of Joint Exhibit A, which

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under cover of a letter to the Board dated September 17, 1968, the Regulatory Staff transmitted to the Board copies of the application and pertinent documents relating to that application. Included in that collection of documents was an index of the record for hearing. This is a three-page document containing 14 items. It is this document which the staff would propose as the Joint Exhibit A to i ntify those documents which are essential, which consist of the application and pertinent documents which I have identified and to which the staff proposes in its motion to receive the joint exhibit to request that all documents contained in this listing may be used by Board and parties by reference for whatever purpose is necessary during the course of the hearing. In other words, this record for hearing index which I have just identified would constitute Joint Exhibit A and all of the documents identified in this index would be used and could be used by Board and

CHAIRMAN WELLS: That is satisfactory to the Board, Mr. Engelhardt.

incorporate them into the record of the proceeding.

parties for whatever purpose is nucessary by reference and thus

MR. ENGELHARDT: I have copies of this 1 lex to which I have been referring which I would be happy to distribute to the members of the Board if they desire or I shall await that until I offer this as Joint Exhibit A at the hearing.

CHAIRMAN WELLS: I think it might be useful for us

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to have a copy. If you don't wish to do it now you can do it at the end of the conference. If you have nothing further to add as far as the Board is concerned, I think that completes item 3.

We come next to item 4, the identification of significant safety matters.

Normally, and I see you have so indicated on this proposed agenda, the staff would make a statement at this time on these issues.

MR. ENGELHARDT: We do have such a statement that
we are prepared to read into the record. We also have proprinted copies of this statement which we can make available
to the Board to follow while Mr. Schwencer is reading the statement or if the Board so desires, it can be incorporated into
this record as if read.

CHAIRMAN WELLS: Let me consult with the Board for a moment.

I think what would be most useful to us, Mr.

Engelhardt, is if you would be good enough to give us the

prepared statement and we will read it and save you the trouble

of reading it orally. We might take about 10 minutes to do

that, or maybe even less.

MR. ENGELHARDT: Very good.

Mr. Newman will distribute those copies.

CHAIRMAN WELLS: To enable those of you who are

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attending the conference, to take a rest, we could call a brief recess while we read this and reconvene in 10 minutes from now.

(Recess.)

CHAIRMAN WELLS: Will the meeting come to order, please.

Mr. Engelhardt, thank you for the statement and it has been helpful for us to review it. I think we are now prepared to indicate to the applicant and to the staff the general lines of questions that the Board has in mind.

MR. ENGELHARDT: May I inquire, Mr. Chairman, as to whether this statement will be incorporated into the transcript of the prehearing conference?

CHAIRMAN WELLS: As if read, yes.

MR. ENGELHARDT: Thank you.

We will make a copy available to the Reporter.

CHAIRMAN WELLS: Thank you so much.

(The Prehearing Statement Collows:)

PREHEARING STATEMENT

ARKANSAS POWER AND LIGHT COMPANY

RUSSELLVILLE NUCLEAR UNIT

The Arkansat Power and Light Company (AP&L), by application dated November 29, 1967, and subsequent amendments, has requested a license to construct and operate a pressurized

water reactor, identified as the Russellville Nuclear Unit, in Pope County, Arkansas.

The proposed reactor is designed to operate initially at core power levels up to 245? megawatts thermal (Mwt). The applicant anticipates, however, that the reactor ultimately will be capable of operating at a core power level of 2568 Mwt. Accordingly, the applicant and we evaluated the engineered safety features of the reactor, and accident consequences at a power level of 2568 Mwt, and evaluated the thermal-hydraulic characteristics of the reactor on the basis of a core power level of 2452 Mwt.

Since the initial filing of its application, the applicant has made three significant changes in the design of the plant: (1) the containment building design was revised to provide for three instead of six vertical buttresses and for 240-degree instead of 120-degree span of horizontal tendons, (2) the emergency core cooling system was revised to provide more complete separation and better protection against failures, and (3) the electrical system was redesigned to provide automatic selection of offsite power for emergency conditions. In addition, the applicant made the following significant changes in the plant design as a result of the regulatory staff evaluation of the application: (1) installed a chemical addition iodine removal system to the containment sprays to assure that any offsite radiation exposure

does not exceed 10 CFR 100 limits, (2) added an onsite pond of water to provide a backup source of emergency cooling water.

The applicant has also agreed to (1) replace 1200 feet of an existing gas line which traverses the site with piping which meets the current ASA code and to isolate the gas line so that in the event of a break the gas line can be shut off, and (2) to perform tests on the containment structure's liner and tendor anchorages to confirm the adequacy of their design. We find the above additions and design changes to be acceptable and compatible with the Commission's General Design Criteria.

The nuclear steam supply system design and the overall containment design of the Russellville plant are very similar to those of the three Oconee plants currently under construction by the Duke Power Company.

The Regulatory Staff, its site and environment consultants, and the Advisory Committee on Reactor Safeguards have reviewed the various site-related factors and have ascertained that the site is suitable for the proposed reactor. In this regard, the Environmental Science Services Administration has commented favorably on the meteorology of the proposed site. The U. S. Geological Survey commented favorably on the hydrological and geological aspects of the proposed site. The Fish and Wildlife Service recommended that the applicant cooperate with appropriate Federal and State agencies in planning the proposed environmental monitoring

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program, and that the results of the program be provided to thes agencies for review and reference. We have also reviewed the design of the proposed plant as related to natural phenomena and have found the design to be acceptable in this respect.

Our seismic design consultant, Nathan M. Newmark, Consulting Engineering Services has determined that the design bases and the design criteria can provide an adequate margin of safety for seismic resistance to those seismic accelerations which have been estimated by the applicant and found acceptable by the U. S. Coast and Geodetic Survey.

We have evaluated the consequences of potential accidents which could involve the release of radioactivity from the Russellville Nuclear Unit and have concluded that in the unlikely event of any of these accidents, the potential doses from the release of radioactivity would not exceed the guidelines set forth in 10CFR Part 100 of the Commission's regulations.

The applicant has identified further development work on a number of items which will be performed during the detailed design of the plant. Each of these items has been identified in the application and in our public safety evaluation. We believe that this development work will be completed for incorporation in the final design of the Russellville Nuclear Unit. In our opinion, these development programs will provide the data necessary to construct the

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facility in accordance with the criteria and specifications set forth in the Preliminary Safety Analysis Report.

The Advisory Committee on Reactor Safeguards, in its letter of Spetember 12, 1968 to the Chairman regarding the AP&L application, made several comments and recommendations. We have considered each of these and will be guided by all of them in our continuing review of the Russellville Nuclear Unit. The ACRS letter concludes that with due consideration to the various items mentioned therein, "... the proposed plant can be constructed at the Russellville site with reasonable assurance that it can be operated without undue risk to the health and safety of the public."

We have concluded, as a result of our review and evaluation of the AP&L application for the Russellville

Nuclear Unit, that the appropriate findings can be made on each of the issues set forth in the Notice of Hearing for this proceeding.

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this caveat, but I hope that the parties will understand that our questions or the lines of questions which we will identify this afternoon are simply that. We may have additional ones by the 30th, but I think the kinds of questions that we will identify this afternoon will be those which we think you might want to have some time in preparation. If between now and the hearing other questions come to our mind in our view that might require information that your witnesses wouldn't have readily available, we will try to get them to you in a suitable form.

our intention to phrase the questions just as precisely as we may wish to during the hearing. Again, it will be for the purpose of giving you the idea of the kinds of things we are interested in. But I think it goes without saying, and I will certainly repeat this at the hearing, some of these questions will be designed not so much to inform ourselves, although at least one-third of the Board, namely its Chairman, needs to be widely informed, but some of the questions we will ask will be designed to inform the public, because if there should be members of the public at the public hearing, and I don't know whether there will be or not, I think it would be desirable for them to get some general idea of the kinds of questions that one thinks about and talks about when he is

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considering the safety of a plant of this kind. Also because we have a small group this afternoon, we can make this quite an informal session and we would be very glad to have the applicant or the staff to ask us to elaborate on our questions, try to clarify them if they are not clear to you, and generally try to make this a useful session for you in preparation for the hearing.

I wonder, Dr. Quarles, if you would be willing to begin with your questions.

DR. QUARLES: Yes. As the Chairman has said, I am not trying to make these specific, but rather to alert the applicant and the staff to areas in which there will be specific questions later on. On page 17 and 18 of the staff's analysis you speak of a five-year period before radiation effects become critical in the pressure vessel, and then indicate that there are means to mitigate the consequences of such failure if it should occur. I would like some discussion of what means are available, how they would be amplied after five years and why they cannot be taken into consideration initially. Why wait five years? A general discussion of this whole aspect of it.

I can't help but comment that the staff's file on he seems to be quite up to date, my tornado question is already in the staff analysis but I would like to know what criteria will be used to determine if it is necessary to add protection

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whole plant. This may be directed towards the staff of the applicant and concerns off-site power abilability. I would like some discussion of just how independent the sources of off-sit power may be, if they are subject to any accident that could cause failure of all sources, a single accident that could cause failure of all off-site power.

I believe criterion 39 talks about failure of one component. In a recent case, a distinction was made between an active component and a passive component. I would like some elaboration of why there needs to be any distinction between active and passive components. And in connection with this, the same question, how reliable is the automatic selection of off-site power, is there adequate redundancy to be sure it will operate and if it will not perate under all conditions, what does the operator himself do to take care of a failure of this automatic system? We are concerned about quality control as most board seem to be and a recent news item has caused even more concern and we wonder what effect reported delays may have on quality control. would like some additional information on the qualifications of the key quality control personnel. And particularly to the applicant, who and his qualifications in the applicant's organization will have the compenner, has or will have the competence to pass on the performance of contractors. The

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applicant may delegate certain things, but he cannot delegate responsibility and therefore somebody in the applicant's organization should be qualified in this area and we would like information on who this is and what his qualifications are.

We also are concerned about this gas pipeline that goes by the site and we would like a discussion of : possible rupture of this gas line and the consequences to the plant. To give you an idea of what sort of thing we are getting at here, if the gas line ruptures, it will come out of the ground and whip around and undoubtedly there will be a fire. Suppose this whipped around so that the jet flames directed against the side of the reactor containment. What then? Another possibility that we would like discussed is suppose unignited gas gets into the ventilating system, what is the relation of the ventilating system of the entire plant to this gas line, both in its present position and in any possible position the ends of the pipe may go when they break. Unignited gas going into the ventilating system could blow up the whole outfit. So I would like some assurance on the review of this particular type of hazard.

Mr. Chairman, I believe that covers the notes I have now, but I reserve the right to ask any further ones at any time before this hearing is finally adjourned in Russellville.

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CHAIRMAN WELLS: Your reservation is duly noted.
Mr. Briggs?

MR. BRIGGS: I have several questions here that are of interest to me. One, I would like to elaborate a little more on the gas line problem. It would be interesting to me to know what accident was evaluated, what conditions were considered in the evaluation by the staff and its consultants and also by the applicant. This possibly will be the accident that Dr. Quarles has talked about, it might be a different one. I would like to have information about the present state of knowledge of the background radiation at the site, how much this background can be expected to be increased by normal operation of the plant, and how these estimates of increase in background correspond to experience in existing nuclear power plants. I would like to know something about the experience that the designer and constructor, if a constructor has yet been selected, what their experience has been with prestressed concrete vessels and I would like to know in more detail about the program that is to be undertaken or is being undertaken to qualify the anchors for the tensioning mambers, and to qualify the anchors for the liners. I would be interested in knowing about the schedule for completing this work.

On page 45 of the applicant's summary there is discussion of the training program and of course further

discussion in the application. In here in one phase of the training it is mentioned that there will be three to five months training in an existing plant or on a simulator. I would like to have some discussion of the equivalence of training in operating plants and simulator training, the relative merits of the two, and what basis will be decided for which kind of training will be given, I mean what basis will be used for deciding which kind of training will be given. And what the staff considers to be adequate training on simulators as opposed to training in an existing operating plant.

On page 29 of the staff analysis they discuss the containment spray system for removing iodine. I would like to have additional discussion by the staff and by the applicant. In particular, I would like to have discussion in some detail of the staff' evaluation of the iodine removal factors for the Russellville containment spray system, what removal factor is required, the staff's estimate of the degree of conservatism in the iodine reduction factor that it calculate and I would like to have the applicant's opinion of the degree of conservatism involved, or that is obtained in these calculations. I would like to know in some detail the additional R&D has required, who specifically will do the work, and the schedule for accomplishing this work, what the critical problems are that could cause the spray system to prove inadequate and

whether there is really serious consideration being given to substituting charcoal absorbers for the spray system, and if so, what R&D is required for the charcoal absorption system or what evidence we have that a design can be provided with demonstrated certainty of meeting the requirements for reducing the iodine concentration in the Russellville plant. I believe that is all that I have now.

CHAIRMAN WELLS: Thank you, Mr. Briggs.

I had one question, I am sure it will be a fairly easy one, but it is related somewhat to the questions on quality assurance, at least in an indirect way. My memory is that the proposed construction permit provides that the reactor will be built some time in early '72, maybe February as the earliest date and the latest date July 1, 1972. First of all, I wondered, was that by any chance a mistake? This five months difference between the earliest and the latest date.

Mr. Jewell, do you happen to know on that?

MR. JEWELL: That was not a mistake.

CHAIRMAN WELLS: That is not a mistake. The question that I had in mind about this is are these dates realistic in light of possible delivery of pressure vessel and the supply of components and that kind of thing? As I indicated, this is informal, but I think this has an indirect relationship to the quality assurance question. I don't know how badly you are going to need the electricity in early

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1972, but if you were going to need it very, very badly, this raises the question of how fast you and your contractors are going to have to work to get it done and does the quality assurance program take into account the strain that might thereby be placed? I would be very grateful for any general exposition you might be able to make on that at the hearing.

Mr. Engelhardt, I believe I am correct, am I not, and if not I would appreciate your correcting me, that whereas the construction permit provides that the plant must be completed by an outside date, in this case it would be July, 1972, it has been customary in cases where good reason could be shown for the Commission to extend that time?

MR. ENGELHARDT: That is correct. If the applicant is unable to complete the construction of the plant by the date specified in the construction permit, the applicant would normally request the Commission for an extension of that date upon a showing of the reason why that date was not to be met and the Commission would, all things being equal, and the proper cause being shown, would provide for an extension of that construction permit by order of the Commission. This is the customary procedure that is followed.

CHAIRMAN WELLS: I think perhaps related to this also -- and this question perhaps should be directed to the staff at the hearing -- since as of now at least this is an uncontested proceeding, this Board will be required only to

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ascertain that the manufacturer supports the application and the review of the application has been adequate -- it might be useful if the staff would give the Board, if it continues to be an uncontested case, some general ideas of how they evaluated the quality assurance program in terms of the ability of the contractors to meet their obligations on a timely basis. Is that reasonably clear?

MR. LONG: Yes, it is.

CHAIRMAN WELLS: The Board recognizes that these are very mebulous matters to say the least, and yet when a judgment is reached, there is always some general basis for that judgment. I think one of the questions that Mr. Briggs suggested was broad enough to cover two or three things that I had in mind. But let me state it my way and then we will be sure that it is generally covered. One of the things that concerns me is, as a member of the Board, and I think it does my colleagues, is at the construction permit stage much of the design is yet to be completed, there is still research and development to be done. That is normal and we accept that. But that does mean that we have to come to some kind of conclusions as to whether there is reasonable assurance that it will be done. Now again we may have a comparatively easy task here, because it appears it is uncontested. But noting in both the applicant's summary description and the staff evaluation there are identification of additional research and

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development to be done and also further design to be completed -- incidentally, I think this was a very useful and clear presentation -- but at the hearing I think it would be useful if you could to update these things to the extent that you can. Now if it is necessary, I can go through here, I have a number of them marked, but I would prefer not to have to do that, so we wouldn't prolong this meeting. But for example there are certain instances particularly in the applicant's summary description where certain things are to be completed by January 1969. Now it will be the end of October when we have the hearing, so presumably you will be pretty close to completion of those. Perhaps this was written say two or three months or five or six months back, so you may be able to bring us up to date on these items.

Does the applicant understand what we have in mind?

MR. JEWELL: Yes, sir.

that I have with reference to these kinds of applications is whether or not the materials that will be produced or the materials that will be used for fuel will be adequately safequarded against diversion for unauthorized uses. I noticed the applicant has stated it will abide by the regulations of the Commission. It am not informed as to what the status of the Commission's regulations on this particular point is.

I know in the Diablo case the Board was informed that they were in preparation. Perhaps the staff at the hearing would be good enough to bring us up to date on the status of the regulations.

MR. FNGELHARDT: Mr. Chairman, would it be sufficient in response to that last quustion if the staff counsel were. to provide, call it a status report if you like, of the current regulations in this area? Or would this be a matter that you require a witness for?

CHAIRMAN WELLS: No --

MR. ENGELHARDT: Because neither Mr. Long and Mr. Schwencer are conversant in this area, this are of safeguarding the material is a responsibility of a newly formed Division of Nuclear Materials Safeguards, and normally their testimony is not required in hearings of this nature, but I would be happy to provide a response to your question if that would be satisfactory.

CHAIRMAN WELL:S That would be satisfactory for my purposes. I don't think we would want to go any further than that. It is really simply the question that we know, at least I think I am correct, that as a matter of law the applicant must abide by the Commission's regulations on this subject. Then if the regulations are promulgated, ipso facto the applicant will have done what is required to be done. But the missing link in our minds now is the status of

those regulations.

I would like to add one general question on the general subject of iodine removal which Mr. Briggs referred to. Since this question has arisen in several cases in the last six or seven months, I don't know how many, but it seems to me practically every transcript I read a fairly sizeable portion of the transcript is devoted to this question, this Board would be particularly grateful if Mr. Briggs' question could be answered in a way that perhaps would not require much discussion at the hearing and might even be useful to subsequent board to which this question arises.

MR. JEWELL: Mr. Chairman, the applicant did not quite understand that last question.

CHAIRMAN WELL: Mr. Briggs asked a series of
questions concering the plans for a moval of iodine. As I understand it in general certain chemical additives are expected
to do this. Research or experimentation is being done to
ascertain if they will. If they don't, then the alternative
is to have charcoal filters. This general subject, I said,
has been the subject of considerable discussion in many of
the hearings. I confess I am not quite sure why it has taken
so much time in each hearing, but it has. So I expressed the
hope that the Board and the applicant and the staff, with a
reciprocal sympathy in asking and answering the questions,
might be able, one, to minimize the time that is required to

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be spent on this subject, and two, perhaps get it answered in a sufficiently definitive way that it would be acceptable to this Board and perhaps to later boards.

MR. JEWELL: Thank you, sir.

CHAIRMAN WELLS: I wonder, Dr. Geyer, do you have any questions you would like to add to these?

DR. GEYER: One thing that it seemed I would like to have a little additional information on is the whole question of protection against floods. It seems a bit unusual that a plant be designed to have eight feet of water around it under the extreme conditions -- I realize these conditions are exceedingly remote. But then the question comes up what constitutes protection provided by Class I structures and problems of floating tanks, anything floating away in the vicinity of the plant, any drains that might admit water inadvertently back into places where it wasn't wanted.

CHAIRMAN WELLS: Any other questions?

DR. GEYER: No.

CHAIRMAN WELLS: Mr. Bond, do you have any questions or any elaboration on the ones the Board has already posed?

MR. BOND: I will spare the record and audience elaboration, Mr. Chairman. But I would like to mention one matter which might be of concern to me in the remotely credible circumstance that I might be participating in the

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activities of this Board. If so, I would want the record to have a bit of clarification or explanation or justification for the position the Board might find itself in in undertaking to approve a proposed finding by the Director of Regulation that the applicant is technically qualified, when thus far examining the papers, including the staff's proposed evidence it appears that the finding there reposed and the conclusion there reached is that the applicant and the contractors are technically qualified. There is a possible inconsistency between the published stated issue and the conclusion thus far reached.

CHAIRMAN WELLS: Yes. I wonder if the question
might not be posed this way -- and I think it is a useful one
to whoever is participating on the Board -- what does the
word "applicant" imply in the proposed finding that the
applicant is qualified? Does it ipso factor include its
contractors, or is it just the applicant alone? The staff
might wish to advise the Board on that. Isn't that essentially
the problem, Mr. Bond?

MR. BOND: That certainly poses the problem of who is the licensee, who must be found qualified and must be responsible to such limitations as the Commission in the license and ensuing licenses may impose on it. Does that or does it not include anyone other than the applicant? Maybe I am asking a biased question.

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CHAIRMAN WELLS: Well, I think for the benefit of the applicant and the staff you are probably aware of it, but in one of the recent cases, the Rancho Seco case, I have read the decision hurriedly, and I believe this was a matter of concern to the Board, and this Board would propose to read the decision more carefully and perhaps you would want to too, but I have an idea that that decision expresses the concern that Mr. Bond is expressing of whether or not this particular Board will be equally concerned I am not quite sure yet until we read it. But I do think that the one question that would be useful for the staff to reply to is when the proposed finding refers to the technical qualification of the applicant, does that include the utility whose name appears on the application, or does that include his principal contractors, his servants, employees, and what not. And therein I think probably lies the answer to this question. But in connection with this, one of the things I noticed in this application and I meant to mention it and I forgot it, and I am grateful to you, JD, for reminding me, the contractor to do the construction work apparently has not been selected yet. Is that correct, Mr. Jewell?

MR. JEWELL: That is correct, sir.

CHAIRMAN WELLS: I don't know whether this is customary or not, but whether it is or not, I suppose that might have some bearing on the question, if the applicant

includes its principal contractors, and if the contractor to do the construction work is one of the principal contractors, that might have some bearing on the finding.

Mr. Bond, did you have any further questions?

MR. BOND: Thank you, no, Mr. Chairman.

CHAIRMAN WELLS: I think it might be useful if we gave the applicant and the staff an opportunity to ask us any questions about the questions we have asked you just to make sure that you have understood generally what we were talking about.

Mr. ENGELHARDT: I think Mr. Long has a question unless you want to defer to the applicant.

CHAIRMAN WELLS: Why don't we wait until they confer. I think we have plenty of time, so take your time.

Mr. Jewell?

MR. JEWELL: Mr. Chairman, the applicant's staff has no questions concerning the questions.

CHAIRMAN WELLS: Well, the Board has been unusually clear. Thank you very much.

Mr. Long?

MR. LONG: I just, Dr. Quarles, I would like to inquire, you mentioned active versus passive with relation to off-site power.

DR. QUARLES: Yes.

MR. LONG: Are you referring mainly to switching

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equipment versus transponders?

DR. QUARLES: I would like a definition of that. I am referring to the Maine Yankee case specifica'ly. I just read it this morning. I was alternate on that Board, and didn't get the transcript until this morning. But one of the questions I posed in that case was the redundancy of offsile power. I don't know whether you are familiar with it in detail or not, but there are two 161 kv lines, so they said, and it turns out both of them are on the same tie line for two miles, one runs down one side and one the other, and in my terminology, that is one line, but they called it two and they hedged on the answer to the question by saying the ACRS which referred to redundancy of off-site power, had meant active components, and if I recall the wording correctly, the person answering that said by active components they meant moving things like generators. To me switch gear would be an active component.

But my question really goes to the point that I see no difference in the ultimate result, whether you call a component active or passive, provided that component's failure causes loss of power. I couldn't care less whether it rotates or stands on its head if it fails.

MR. LONG: That is the reason I asked the question.

DR. QUARLES: I can't refer you to the page, but

I think you will get it if you look at the Maine Yankee

case, about the middle of it.

MR. LONG: Fine, thank you.

I have one other question in general to the Board, as far as the iodine removal, the expression has been made that we be direct and I guess short in our response. We feel that in order to adequately cover the subject, particularly in light of Mr. Briggs' questioning, it might be more adequate if the staff were able to prepare -- and I am not saying now I am, -- but able to prepare an exhibit which we could submit to the Board and then summarize at the hearing to indicate what we have done, but the axhibit itself would set forth the details.

Would this be acceptable to the Board if we are able to do it between now and the hearing on the 30th?

MR. BRIGGS: I think that could be acceptable. I believe the problem Mr. Wells was concerned with is our spending three or four hours on one day and three or four hours on the next day asking questions and esting answers and then asking questions again. One would like to clear it up with the staff telling what the status is, and what work needs to be done and what they went through in making the evaluation, what the conservatism is, and then the Board having to ask maybe only a very few questions to clear the whole matter up.

MR. LONG: That is what I was driving at. I have suffered through one like that.

CHAIRMAN WELLS: Well, if there are no other questions,

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I think we come to the item on the agenda marked posthearing procedures. Before we get to that, however, and perhaps it can be related to questions, I might mention to the
applicant that the Board would like an opportunity to visit
the site on Tuesday afternoon, October 29th, some time after
three o'clock. We will be coming from various directions and
I can't be sure exactly when we will arrive, but hopefully no
later than four and as shortly after three as possible.

Would that be possible, Mr. Jewell?

MR. JEWELL: It will be possible and will be arranged.

CHAIRMAN WELLS: Thank you. I think actually the guard at the gate might just be alerted we will be coming. We will probably have our own transportation.

MR. JEWELL: There is no gate, no guard, and there is really nothing to identify the specific site of the reactor. You are going to need a little guidance, and we will provide that.

CHAIRMAN WELLS: Thank you very much.

With respect to the post-hearing procedures, the transcript corrections, what would you suggest with respect to the transcript corrections, Mr. Engelhardt?

MR. ENGELHARDT: Well, Mr. Chairman, I think the transcript corrections could be made either simultaneously with the filing of the proposed findings, or depending on how

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we establish the proposed findings schedule, the transcript corrections could be made within one week of the conclusion of the hearing.

CHAIRMAN WELLS: I wonder if it wouldn't be useful for us to decide this on the 30th.

MR. ENGELHARDT: I think it would be very appropriate to decide that on the 30th.

CHAIRMAN WELLS: It might happen we could complete all of this fairly quickly and it may be certain questions are raised that we would want a little more time. But why don't we delay these things until the 30th.

MR. ENGELHARDT: Are you talking about transcript corrections or all of the post-hearing procedural matters.

CHAIRMAN WELLS: Yes, I was including all of them.

MR. ENGELHARDT: I think one point, with regard to proposed findings, is would this Board accept proposed findings at the conclusion of the hearing, assuming this proceeding remains an uncontested proceeding, would it be acceptable for this Board to receive proposed findings without reference ence to the transcript pages? Or let me say without reference to specific additional matter that might be discussed during the course of the hearing, other than that matter which is already covered in the summary statement and the staff's Safety Evaluation?

CHAIRMAN WELLS: I haven't had an opportunity to

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 discuss this with my colleagues and I will do so before the 30th.

My view on this, Mr. Engelhardt, is that if there has been substantially no new material developed during the course of the hearing on the 30th, we would be sympathetic to receiving the proposed findings and conclusions of law at the conclusion of the hearing, without references to the transcript. If, however, we feel that either as a result of our questions or volunteered information, that there has been substantially additional information presented, it would be helpful to us in writing our decision if we had that keyed to the transcript.

So I think it would be useful just to play this by ear, depending on how the hearing goes on the 30th.

Now this would suggest to me, and I don't want to be presumptious, but that you may want to prepare your proposed findings and conclusions of law and I assume if you prepared them and had them ready for submission, you would not have lost anything, even though you might be given a few more days to key them to the transcript.

Would that be acceptable to you?

MR. JEWELL: That would be acceptable to the appli-

MR. ENGELHARDT: It would certainly be acceptable to the staff.