UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the Matter of:)
)
BECHTEL POWER CORPORATION)
)
CLINTON INDEPENDENT DESIGN REVIEW)
)
First Progress Meeting)

The following is a stenographic report of proceedings had in the above-entitled matter at the Holiday Inn, 5446 North River Road, Rosemont, Illinois, on Tuesday, October 16, 1984, commencing at the hour of 11:05 a.m.

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BEFORE:

Mr. James L. Milhoan, USNRC: DQASIP/QAB
Mr. G. S. Lewis, USNRC: DQASIP/QAB
Mr. J. Geier, Illinois Power

On Behalf of Bechtel Power Corporation:

Mr. Charles W. Dick
Mr. Gordon L. Parkinson
Mr. R. S. Powell
Mr. Charles W. Jordan
Mr. Robert S. Cahn
Mr. Edward M. Hughes
Mr. Eric E. Heinz

On Behalf of Sargent & Lundy:

Mr. Henry M. Sroka
Mr. Roger Heider

On Behalf of the NRC:

Mr. E. V. Imbro
Mr. Robert F. Warnick
Mr. Frank J. Jablonski
Mr. Byron L. Siegel
Mr. R. J. Goddard

On Behalf of Illinois Power:

Mr. Frank A. Spangenberg
Mr. George Edgar, N&H
Mr. Charles D. Fox, IV, Attorney, Schiff Hardin & Waite

On Behalf of the Attorney General of the State of Illinois:

Mr. Allen Samelson, Assistant Attorney General
Mr. Greig Siedor, Assistant Attorney General
Mr. R. B. Hubbard, Consultant, MHB Technical Assoc.

Also Present:

Mr. Theodore J. DelGaizo, Westec Services, Inc.
Mr. Michael Parker, Illinois Department of Nuclear Safety
Mr. Robert R. Mince, Illinois Department of Nuclear Safety

MR. MILHOAN: Good morning. Welcome to the meeting on the -- first progress meeting on the Clinton Power independent design review.

The purpose of this meeting is to discuss the first interim report of Bechtel's independent design review of the Clinton Power Station.

On October the 2nd, a meeting notice was issued. The meeting is open for interested members of the public to attend as observers. And prior to my closing remarks at the end of the meeting, I plan to give an opportunity for members of the public to provide comments on the first interim report, if they desire.

I would like to go around the room at this time and have individuals introduce themselves.

I am Jim Milhoan, Chief of the Licensing Section of the Quality Assurance Branch of the NRC's Office of Inspection and Enforcement.

MR. LEWIS: I'm Lou Lewis. I work for GM and am the Clinton IER project manager.

MR. GEIER: Julius Geier, assistant to the vice president of the Illinois Power Company.

MR. IMBRO: Eugene Imbro, also work for the NRC. I work for Jim Milhoan in the Office of Inspection and

Enforcement.

MR. JORDAN: I'm Charles Jordan, chief electrical engineer with Bechtel Power Management and also the Class 1E ac system team leader on the Clinton review.

MR. CAHN: Bob Cahn. I'm assistant to the nuclear chief of Bechtel Power Management. I'm also a team leader on an independent review of various aspects.

MR. DICK: I'm Charles Dick of Bechtel. I am independent design review programs manager.

MR. POWELL: Robert Powell, Bechtel, principal engineer, and I'm the team leader with the shutdown service water system and the HPCS system.

MR. PARKINSON: I'm Gordon Parkinson, the project manager for the independent design review for the Clinton Power Station.

MR. HUBBARD: I'm Richard Hubbard of MHB Technical Associates, and I'm here representing the Illinois Attorney General's Office.

MR. SAMELSON: I'm Allen Samelson, State of Illiois Attorney General's Office.

MR. SIEDOR: My name is Greig Siedor, G-r-e-i-g, S-i-e-d-o-r. I am also with the Attorney General's Office.

MR. DEL GAIZO: Ted DelGaizo. I'm with

Westec Services Incorporated, and I'm a consultant to the NRC.

MR. HUGHES: I'm Ed Hughes. I am with Bechtel. I'm the IDR liaison manager with S & L.

MR. HEINZ: I'm Eric Heinz. I am with Bechtel Corporation. I'm assigned as administrativor to the Clinton IDR.

MR. SROKA: I am Henry Sroka, project director for Sargent & Lundy.

MR. SIEGEL: I'm Byron Siegel. I'm the licensing project manager for the NRC for the Clinton Power Station.

MR. GODDARD: Dick Goddard, attorney for NRC staff.

MR. SPANGENBERG: Frank Spangenberg, licensing department, Illinois Power.

MR. EDGAR: George Edgar, counsel to Illinois Power.

MR. FOX: Skip Fox, attorney for Illinois Power.

MR. HEIDER: Roger Heider, project manager for Sargent & Lundy.

MR. WARNICK: Bob Warnick. I'm branch chief for plants under construction in Region III.

MR. JABLONSKI: I'm Frank Jablonski, Region III

project inspector for Clinton.

MR. MILHOAN: Thank you very much.

Before proceeding with the agenda, I would like to clarify -- handle one administrative matter with respect to responsibility for preparation of the meeting minutes.

My understanding would be that Bechtel would prepare the meeting minutes for this meeting and make the distribution of those minutes.

Any objections on that?

MR. PARKINSON: No.

MR. MILHOAN: Good. On October the 9th, Mr. Parkinson forwarded to Mr. Geier a proposed agenda for the meeting. This morning we were handed out minor corrections to the proposed agenda. I have no comments on the proposed agenda.

I would like to turn the meeting over to Mr. Geier at this time, see if he has any comments before proceeding with Bechtel's presentation.

MR. GEIER: This is the first of three meetings that we plan in connection with the revised reporting plan that has been proposed by Bechtel, accepted by Illinois Power Company.

Instead of the single interim report as was

prepared for the Byron IDR, we expect from Bechtel three monthly interim projects reports to be issued on the first of October, November, and December, respectively. Then we will hopefully have within ten days or two weeks of the issue of those monthly reports follow-on public meetings of this type.

We see as the main advantage for this approach is that we can get feedback information on the IDR which will help us have longer lead time for corrective action and applying the kind of measures to the reporting and to the actual execution of the IDR which will hopefully give us a better job.

That's really the only comment that I wanted to make this morning. And at this time, then, I will turn the meeting over to Charlie Dick, Bechtel Power Corporation.

MR. DICK: Thank you, Julius.

Before we begin the formal or organized part of the program, I would like to make a few general introductory remarks. And even before that, let me ask if there is anybody who does not have a copy of the agenda? If so, Eric Heinz is prepared -- has some extras and is to prepared to distribute them.

Bear in mind, this has been revised slightly

from what was issued a week or so ago. You can identify it by a number in the lower right-hand corner which is 101384B. That is the current version.

I might add that the change is a very minor one. It simply re-allocates the time of it -- between Items 2 and 3 and adds the NRC as a sponsor to Item 1.

Very well. Then I would like to make a few comments at the beginning to introduce our subject here.

First of all, we are pleased to meet and present this progress report to you. We are well along into the design review at present, and we believe it is proceeding successfully.

One thing I would ask that you recognize, however; and that is, that there are many activities which are proceeding in parallel. As a result, it is early, too early in fact, to arrive at any significant conclusions.

As you can perhaps appreciate in any sort of a review of this sort, one finds it is necessary to complete a series of events before conclusions can be reached.

Accordingly, the individuals presenting our progress report today will be long on what we are doing

and how we are doing it, but will probably find it necessary to defer until a future meeting with regard to conclusions and results.

Now, I would like to present the first of several viewgraphs.

MR. MILHOAN: I forgot to say one thing in the introductory remarks.

Bechtel is going to be using viewgraphs. At the conclusion of the meeting, there will be one set of viewgraphs available for each organization at today's meeting. We have a very limited number of copies. But that should suffice if we provide one organization with a copy of the viewgraphs.

MR. DICK: Thank you, Jim.

I hope that is sufficient for the people at the back of the room. This is simply a listing of what we hope to accomplish from this meeting.

First of all, we wish to introduce the management of our IDR team. These are the people that are responsible for the day-to-day operations. Some of this has been done, and I will come back to that in a moment.

Next is to provide an outline of our progress report. That progress report was issued on October 1,

and we anticipate summarizing that for you and responding to questions that you may have.

Third, we hope to respond to certain subjects of special interest, which we understand are held by the people in this room, including the NRC and the other interested parties.

And then finally, and perhaps most important for us, is to obtain feedback from the attendees of this meeting.

As Julius indicated, one of the purposes of these progress meetings is to obtain this kind of feedback to incorporate that in the ongoing work of the IDR in a timely way so we may reflect it in the final report and, of course, thereby the final results.

This viewgraph is a revised organization chart to the one that was presented to you at our meeting in Bethesda on June 28th. It is revised in only one respect. We have added to it an IDR manager for our Chicago operations. That is Mr. Ed Hughes, who has introduced himself. Let me identify the other individuals on this chart who will be speaking today.

You have met Gordon Parkinson, who is the project manager and is responsible for directing the day-to-day operations of the IDR.

The class 1E electrical systems activities are headed by Mr. Chuck Jordan, who is the system manager for that activity.

The next item here is identified as the HPCS, which is the mechanical system and which has been expanded to include also the shutdown service water system, and that is the responsibility of Mr. Bob Powell, who is the systems manager for that activity.

The activity identified here as IDI/IDRS is actually the horizontal review. And that is the responsibility of Mr. Bob Cahn, who is the manager for that activity.

I might add that we have also included in that the overall responsibility for the horizontal reviews. That was identified to you, I believe, in our June 28 meeting.

In addition to the horizontal reviews, he has the overall responsibility for the common design activities, such as the high and medium energy line break activities.

My position is that as programs manager, and as such I have the overview of this review as well as others for which Bechtel is responsible.

MR. LEWIS: Question, Mr. Dick.

MR. DICK: Yes.

MR. LEWIS: Do I understand that the INC review efforts for -- related efforts for HPCS shutdown service water system and other parts of the system found necessary will be done by that INC entry under class 1E electrical systems? I don't see INC as a shread-out in the other vertical review.

MR. PARKINSON: Yes.

MR. DICK: Yes.

MR. LEWIS: I'm just trying --

MR. DICK: That was the purpose of our footnote in here where we indicate where we will have each group supporting the others.

MR. LEWIS: All right.

MR. MILHOAN: Excuse me. Charlie, is there a preference for us holding our questions to the end of the individual presentations, or covering them during your presentations? We will do whatever you desire.

MR. DICK: No, there is no preference for that. If you feel it's necessary for clarification purposes or other to ask a question as the speaker is going along, please feel free.

If, on the other hand, you anticipate we may

cover it later on as a result of what you see in the agenda, you will notice that at the end of the period we have allocated a time for overall questions and answers. So you really can have several shots at it if you wish.

I might add that the overall method of operation we prefer here is to keep it relatively informal, since we would like to have a full and complete communication with you. All right.

With that, I would like to ask Gordon Parkinson to pick up on the next item of the agenda, which is a summary of our progress report.

MR. PARKINSON: Thank you, Charlie.

MR. DICK: Excuse me. There's one other item I should have mentioned to you; and that is, that in his role as project manager, Mr. Parkinson will also act as the master of ceremonies, if you will, of the Bechtel presentation here, and will be responsible, of course, for keeping us on schedule.

MR. PARKINSON: Right. We are already about ten minutes or so behind, so we will have to pick up the pace a little bit.

The purpose of my comments will be, one, to status our work activity up through the reporting

period per the progress report, which takes us through October 1.

It will go without saying that, I believe, in some of the ongoing presentation later on when we get into details, there will be more of a currency to the effort that we are involved in. But I will try to stick to the level of effort that we reported up through October 1.

Also I would be setting the stage for the system leaders in their more detailed reviews forthcoming here.

But what I would like to do right now, though, is bring into focus the calendar of events of our ambitious program here. I say ambitious. It started out rather luxuriously, but we are getting down to a tight situation.

We had our initial meeting with the Power Company in June of this year. As Charlie mentioned earlier, there was a dialogue in Bethesda on June 28th to kind of get the ground rules, the scope of the program.

We were committed to issue a program plan by July 10, which we did. It was subsequently revised after receiving some comments on the 19th. It was

revised again in the form of an amendment in response to some questions on August the 17th.

So between the period of July 10 and August 17th we modified the selection of the systems. And if I can make a slight correction to the prior slide that Charlie had there, the HPCS was shown diagrammatically here, graphically, and actually the prominent system that we are reviewing is the shutdown service water with HPCS getting a limited review.

By way of explanation, the reason for that was in these meetings it was determined that the HPCS was prominently a General Electric design, and it was thought better that we pick one that Sargent & Lundy had a more prominent responsibility for; to wit, the shutdown service water system. We had that change between July 10 and August 17.

We also picked up on-site walkdowns as an increase in the scope of our work effort. And then our design review was extended to take into account some aspects of Reactor Controls, Incorporated, their effort as it related to Clinton predicated on the IDR performed by the NRC on the River Bend project.

The document, that IDR, has just recently been released, so we are just getting into the

assessment of that effort at River Bend.

Subsequently, Illinois Power approved the program plan, submitted it to the NRC. On September 10 it was approved by the NRC. And this is now our drop-dead date for issuing a final report.

Briefly -- you will see this slide a little bit later -- our tasks come into four categories. One, we want to assure that all the licensing commitments are met for the systems that are under review. This includes the design requirements and criteria that have been established for the project.

We want to review the design adequacy of the systems that have been selected; the design process used in performing that design, creating that design; and then drawing broader conclusions as a result of this total effort, which is a general assessment of the three prior items.

In more detail, the tasks are broken down into matrix form here; shutdown service water systems, the electrical class 1E ac, and on the other reviews; subdivided by disciplines and then broken down into various requirements.

I may be a little redundant here in pointing things out to you because we are close enough, I

believe, to see it. Checking the licensing requirements, which was the first item; design adequacy; design process; interfacing with GE and other consultants. This is an important aspect, how the design evolving by S & L interfaced with their counterparts on the other end of the system.

Design change control, S & L design reviews, that which they performed themselves. Common requirements takes into account the high energy and moderate energy line break activities, fire protection, the seismic II/I considerations, and then the as-built walkdown, which was brought into the picture relatively recently.

As to performance, we are showing this much effort performed as of October 1. We had about 500 documents that we reviewed. These include specifications, drawings, calculations, and other formal documentation created by Sargent & Lundy.

We had 13 meetings with Sargent & Lundy and others, including the Power Company and the NRC. We have generated at that point in time seven potential observations, which we will discuss a little bit later in the -- as to the process of how these are taken care of internally within the review team.

Out of these seven potential, we have created one observation report, which, in accordance with the protocol, has been submitted to Sargent & Lundy, the Power Company, and the service list.

MR. MILHOAN: On this slide now, this is as of October the 1st?

MR. PARKINSON: This is correct.

MR. MILHOAN: Not as of today?

MR. PARKINSON: That's correct.

Breaking down the program status, I would like to briefly run through the individual tasks.

What we are looking for -- and these will be covered in a more definitive fashion when the systems leaders discuss their individual effort but, in any event, just to brief everybody and bring them up to speed -- in the design requirements, we are operating with checklists which have been produced for the respective systems, a project or a team procedures, we have four of which, and three I'll discuss in a little bit on how we will go about performing our work and also the commitment lists which are the sum of the FSAR and other commitments that have been generated on the project for the design teams to adhere to.

In the piping engineering, so far or as of

October 1, we have reviewed some 18 documents, including calculations, design specs, design criteria, piping fabrication specs, P&IDs which are diagrams, Sargent & Lundy piping standards, and other miscellaneous design information.

In the plant design area, we have only established at this point in time the design requirements. We had not gotten into any detailed effort.

In the civil/structural area, pertinent portions of this, FSAR have been reviewed. We have reviewed the NRC questions; open items have been noted.

The seismic analysis and pool dynamic load analyses reports are underway. The reviews of structural steel design and reinforced concrete design of the circulating water screen structure -- and I mentioned that one slide, protracted statement -- we are spending some time taking a good look at that and other parts of auxiliary control and desiel generator buildings.

We are also looking at them in the structural steel and reinforced concrete design effort. We have sample calculations that we have selected for review in these areas also.

Under the stress section, we are addressing, specifically because of the thermogradient, the HPCS, the high pressure core spray system, inside the containment, from the containment walls to the reactive vessel. And we are just getting into a review of those calculations.

The mechanical area, we are reviewing the design criteria for the service water system and the contract specs for the equipment, project constructions, and other project design control tools that S & L uses.

Equipment qualification, we are reviewing the design requirements. They are complete on the AC distribution. As a matter of fact, we are complete on all three systems; the review of the design requirements for AC distribution, service water system, and the HPCS.

We have reviewed 10 procurement specs, and a total of 31 commitments have been identified and reviewed.

In the instrumentation and control, we have reviewed the FSAR, the safety evaluation report, and the supplements for commitments. In total as of October 1, we have reviewed 28 design documents.

In the electrical systems, we have reviewed and identified the design criteria, commitments, and the various design requirements as established by the FSAR and NRC questions and responses, industry codes and standards that would be followed on the project.

Some of the products or documents reviewed are the single line diagrams meter and relay diagrams, key diagrams and design calculations.

In the high energy line break, moderate energy line break area, we have drafted a commitment list for reviewing that. And that is well underway.

Fire protection, we have reviewed the FSAR and established what the licensing commitments were there. We have reviewed the safe shutdown analysis and fire protection evaluation report to establish any design basis and criteria for the fire protection systems.

The seismic II/I, again we were just getting underway in reviewing the licensing commitments.

Observations, as I noted previously, we have prepared one observation which takes into account a concern we have over the design requirements. This will come up again in the next task on design adequacy.

MR. MILHOAN: Mr. Parkinson, with respect to that

slide, the one area that I noted -- I think I'll ask you -- I think it is probably covered in the mechanical area. Normally in an IDI inspection we have a section called mechanical systems which deals with operability of flow rates, head calculations.

MR. POWELL: Yes, that's included.

MR. MILHOAN: That is in the mechanical area?

MR. POWELL: That's correct.

MR. MILHOAN: Thank you.

MR. PARKINSON: Bob has a specific one on that.

MR. POWELL: Also the pipe supports is on there, too. It hasn't been listed as a separate item. The pipe supports is under the stress and pipe supports.

MR. MILHOAN: Okay.

MR. PARKINSON: Task 2 covers the design adequacy. The underpiping engineering, which Bob Powell takes into his category of effort, we have reviewed 14 documents at this point in time, including piping and instrumentation diagrams, calculations, valve specs, piping specs, valve operability documents.

Under plant design, we were just getting going in that direction and requesting documentation from Sargent & Lundy.

Under civil/structural, we have reviewed for

design adequacy the capacity of the ultimate heat sink, which is the cooling pond, soil engineering parameters, tornado design parameters, the screen house flood protection, fire rating on structural walls, and architectural doors.

In the stress department, again under the design adequacy, we are reviewing the various analyses and supporting documentations. And it's well underway for the selected systems.

The mechanical area, again we have been reviewing the diagrams, calculations, and contract specs.

Equipment qualification, we have reviewed 6 equipment packages, 12 binders, whatever that constitutes -- it was pretty significant as far as volume goes -- and 10 purchase specifications. We have reviewed these binders for pump and valve operability qualification and environmental qualifications.

The electrical systems, they have reviewed for design adequacy. The design criteria single line meter and relay diagrams, P diagrams, and design calcs are included.

In the HELB/MELB area, among these documents we reviewed copies of the Clinton design criteria,

applicable GE design specs, and completed Sargent & Lundy jet impingement and MELP calculations.

Fire protection, we are reviewing reports, layouts, and various diagrams.

And then in the observation arena again, the one observation we have issued also takes into account the design adequacy.

MR. LEWIS: Question, Mr. Parkinson. This is Mr. Lewis, NRC.

I noticed under task 1 that you had checklists established for each system to be reviewed. Is there a similar checklist that gives you your items to be reviewed under task 2 and 3?

MR. JORDAN: Yes.

MR. PARKINSON: The answer is yes. The checklists encompass the three --

MR. LEWIS: One, two, and three?

MR. PARKINSON: Yes. The checklists identify the -- I was trying to find the correct word -- the general areas and specific areas that we are going to look at. And that would cover the design requirements and adequacy as well.

MR. LEWIS: And process?

MR. PARKINSON: Well, it would be part of the

design process, yes.

MR. LEWIS: How do you intend to cover instrumentation and control under task 2? I noticed in Table I that you had INC as a separate review area for control system design, separation, protection system, and enunciation. I don't see it listed. You had it X'd as design adequacy.

MR. JORDAN: That's an oversight. Control system is definitely under design adequacy. It is under all three tasks.

MR. LEWIS: So you will have a second commentary in the follow-on progress reports in that area under 2 and 3?

MR. POWELL: Yes, sir.

MR. JORDAN: I'm not sure. Are you asking about the format of future progress reports?

MR. LEWIS: Well, yes. But more than format, as you indicate that island is a review area that is going to look at Sargent & Lundy's design process in the area of control system design, separation, protection system, and enunciation.

However, that's going to be done in both the vertical and horizontal reviews. So it's in that sense that we want to see the progress in that area as to

design adequacy and design process.

MR. DICK: That will be included.

MR. PARKINSON: That's an omission on our part. It's been a pretty extensive effort, quite frankly, the instrumentation and control. And it's been more under the purview of Chuck Jordan in his electrical activity.

We probably should have noted it on here as a separate review item.

MR. DICK: I might add, Mr. Lewis, one observation we have issued has been in that area. So there is some tangible evidence of activity.

MR. PARKINSON: In the design process -- and I'll try to speed along here.

Under piping engineering, to give you some quantitative idea, we have reviewed 19 documents in the design process.

Plant design, as I indicated earlier, we were just getting underway and getting information from S & L to look at there.

Civil/structural, we have had 31 design standards, 28 calcs, 60 drawings, and 3 specifications under review.

In the stress area, we've had 12 stress analyses and 1 nuclear Class 1 stress report that we

have been reviewing.

In the mechanical, P&IDs, calculations, contract specs, project instructions have been reviewed.

In equipment qualification, we have had 10 equipment packages that we have reviewed.

The electrical systems, the process of the development of the single lines, meter and relay diagrams, and other S & L documents have been reviewed.

I might add in that area, the GE and other vendor documents were reviewed for design interface with the power plant portion of the Class 1E electrical system.

Also the Sargent & Lundy internal system design review report for the class 1E electrical system was also reviewed.

The HELB/MELB, we have reviewed project procedures and documentation for the design process involved there.

Under quality engineering, the process, we have reviewed Sargent & Lundy's QA manual, their comments to 10 CFR 50 Appendix B and ANSI N45.2-11. In addition, nine general QA procedures and seven project instructions have been reviewed.

In the seismic II/I, we were just getting underway to looking into that design process. And again, the observation we have prepared picks up the design process activity.

MR. LEWIS: Question on that, Mr. Parkinson. Mr. Lewis again, NRC.

In the program plan 3F1 on page 16, you had a definite entity, which I think is generic -- it runs across all of these -- on adequacy of design calculations.

I think we are going to cover this later, but in the process task 3, I would have expected to see some activity in the calculations. How do you anticipate handling that? Could you speak to that?

MR. PARKINSON: In the individual presentations by Bob Powell and Chuck Jordan, they will go through a sampling of calculations which will draw out the process of our review and portray what the process, of course, that S & L has employed in performing that calculation.

MR. DICK: Let me just add to that, if I may.

We do not look at calculations as a functional type of a review; that is, a horizontal slice. We consider them an integral part of the total

design of the systems which we are reviewing.

That is, for the SSW system, it would be the calculations for the piping, for the structure, and so forth, all as an integrated part of the total design.

To us calculations is not in itself the design. It is a part.

MR. LEWIS: But if you were looking -- as you look at instrument set points, for example, on adherence to reg guide 1.105, I would expect to see the check of that as an integral part of one of the vertical reviews then.

MR. DICK: That is correct.

MR. PARKINSON: Yes.

MR. LEWIS: All right.

MR. PARKINSON: And finally, task 4, it's kind of a lumpy thing. Actually it's general assessment, but we have inserted also the horizontal review activities under the purview of Bob Cahn and walkdowns.

But in any event, the general assessments takes into account a review of the first three tasks. We will assemble and analyze those conclusions arrived at in those tasks and see if we can't come up with some general conclusions.

In the case of the horizontal review, this

has been initiated. We up to this point have reviewed 114 report items; 53 of these have been closed because they did not indicate any discrepancies that existed and/or were not applicable to the design process or to the Clinton IDR scope.

For those that aren't familiar with this, the horizontal review takes into account five other reviews. The Cygna Energy Services independent design verification of Fermi is one of them; Teledyne's IDR of LaSalle is another; the NRC integrated design inspection of Byron is another; the Bechtel IDR which we have just consummated on Byron is another one; and then INPO's review of Clinton is a fifth one.

Tnese in accordance with the program plan have been looked at for commonality and looked at in the light of what we are now doing on Clinton to see if we can come up with any kind of a generic or common problem or concern.

And these numbers that I am relating to, these statistics, take into account the various items that we have extracted from these various reports for a look-see.

So to repeat, with 114 have been reviewed as of October 1, 53 have been closed because they weren't

applicable. We have 61 remaining items which are still under consideration and review.

MR. MILHOAN: Excuse me. Let me say on this one, you are correct, is the status on that horizontal review.

I just might say that we have initiated a letter dated October the 13th to Illinois Power, the NRC has, which we ask that Illinois Power provide you the list of the 20 engineering design areas identified by Illinois Power in the Stone and Webster.

I think you have seen that correspondence between Mr. Hall and the NRC on that area.

MR. PARKINSON: Yes.

MR. MILHOAN: And also provide you the evaluation of the Sargent & Lundy design practices in the case of Zimera, specifically section 2.5 of the new reg 0969 for your consideration and use in the horizontal review.

I may say this was dated October 13th, and Mr. Geier has not had an opportunity to see the letter, so --

MR. PARKINSON: We had a prior telephone conversation on this, so I'm aware of it.

In the area of the walkdowns, which was an

add-on after the July 10 issue of the program, we were taking into account the environmental aspects, the obvious which was a design configuration review, what we see in the field versus the drawings.

We have been preparing walkdown packages, and Ed Hughes will discuss later in a little more detail the scope of our effort in the walkdown area, which is more current as opposed to taking us up to just October 1 because the walkdown work didn't commence until after that.

We have selected something like 30 pieces of equipment for verification during the walkdown. We are -- in the HELB/MELB area, we are looking at the physical circumstances associated with that to match it against the design and study effort.

Outside of the containment, we are looking at the effectiveness of separation as established by S & L design. Inside containment, we are looking at the individual pipe breaks and comparing that with the calculational results.

Under the walkdown category or the common areas, we are delevoping work sheets for the fire protection walkdowns, and we have selected some nine fire zones to examine there.

In the seismic II/I, we have picked some 20 walkdown areas to look at and have in our hip pocket another 20 more as possible areas to look at in the event the first 20 aren't totally satisfactory.

I might conclude in this arena that we will be checking through the mechanica' process work and the electrical and the civil/structural design verification in accordance with all the drawings that we have acquired from S & L from for this review.

Finally --

MR. MILHOAN: I would like to --

MR. PARKINSON: Yes, sir.

MR. MILHOAN: On task 4 you list -- and I recognize this is the first progress report -- you cover only two areas of horizontal reviews and the walkdowns.

Would it be your intent -- and I'm getting a little ahead to the final report also -- but with respect to the progress reports, would it be your intent in the area of general assessments to try to provide a general assessment of, I would characterize it as, each of the major design disciplines?

I notice in your Table I, your review subjects are broken down to what I would consider

design disciplines as part of your general assessment.

Would you intend on addressing that aspect?

MR. DICK: May I respond?

MR. PARKINSON: Yes.

MR. DICK: I presume what you are referring to, Mr. Milhoan, is the way in which we would organize the final report versus progress reports?

MR. MILHOAN: I say I'm jumping ahead, but it also comes to mind -- I was going to cover that when we cover the final report, so I will hold that part of the final report open until we get to that part of the agenda.

But with respect to the progress report, it appears the general assessment is that you only cover two areas. But you do, I would assume, have a general assessment of the design disciplines?

MR. DICK: Yes.

MR. MILHOAN: And would you intend on covering that in future progress reports? Or is that too premature?

MR. DICK: It's a little difficult to say at this time. I would say to the extent we could, we would.

But based on experience, I would have to tell you that would be a very difficult thing to do from a

practical standpoint.

Because really when we write our final report, we are going right up to the end of our evaluations, and then we cut off. And it isn't until you get to that point that you are really in a very good position to make an overall evaluation; that is, assuming there are any areas which still require investigation.

Clearly if one can say that there are some areas which are perfectly clean, that's an easy thing to say, and we could where -- we will where we can.

MR. MILHOAN: I agree. From the IDI experience, I agree with your remarks. It's hard until you get everything together and sit back and look at what the individual observation reports or individual findings tell you to draw an overall conclusion.

It just appears that task 4 under general assessment with respect to progress reports is very limited at this time. And maybe that's a recognition that we have to attach to the general assessment progress report.

MR. DICK: I'm afraid that is the case. I don't know whether we have completely responded to your question or not, but I don't think there is a complete

answer at this point in time.

MR. MILHOAN: Okay.

MR. PARKINSON: I have two more viewgraphs that will conclude my presentation for the time being. And this includes a summary of our potential observation reports that we have generated up to October 1.

It gives you kind of a feel or a flavor, if you may, of what we have looked at, our description of our concern, whether we have established a valid -- whether it's a valid or a significant concern, safety item, and the statusing of it, where it stands in getting resolved, and a description of the resolution where that occurred.

We only show one resolved at this point in time. And as it turns out, this time delay relay coil was incorporated back into the OR1. We closed it out as a concern at the time for the level of definition that we identified when we first brought it to the floor. We had a total of seven PORs. This shows the remaining two which have gone to a level one committee for our further discussion and disposition by the team.

And that concludes my review for now. I would like to turn the meeting over to Sargent & Lundy so that they have a -- their few moments of say.

MR. DICK: While -- this is Charles Dick again. I'd like to offer one small correction just for the sake of accuracy of the record. And that deals with the cut-off date for this project report.

There was some prior discussion which we may have left you with the impression that it was October 1. Actually it was September 25, as is indicated within the progress report.

I mentioned that not only for the sake of accuracy of the record but for the sake of future progress reports to understand a period which would be embraced by them.

MR. MILHOAN: Thank you.

MR. HEIDER: My name is Roger Heider. As I said earlier, I'm the project manager on the Clinton project for Illinois Power, and I'll just be very brief, and maybe we can make up a little time.

Sargent & Lundy is the designer of the Clinton Station. And it's a partnership that has been serving the electric industry for about 90 years.

The organization is organized under a project director who is a partner of the firm, and reporting to him is the project manager, a field project manager, a project administrator. And reporting to us are

basically discipline engineers in each of the three major disciplines, project engineers.

We have a fairly large staff at the field to support the construction activities right now, and there are some design activities being performed in the field.

Sargent & Lundy's design process for nuclear safety related activities is governed by our quality assurance program. And then that program is supported by an extensive use of departmental standards, divisional standards, project instructions, and other instructions.

Under our QA program there has been a formal auditing program which is being conducted in accordance with the requirements of 10 CFR 50 Appendix B.

In addition, Illinois Power Company, the NRC, and other people have conducted audits of the Sargent & Lundy design process. Those have been ongoing really since the inception of the project and continue today.

Sargent & Lundy understands the importance of the independent design review verification that Bechtel is currently conducting. And we intend to cooperate with them and provide timely responses so they can meet

their commitments and schedule requirements to Illinois Power.

If there are any questions, I will try to address those for you.

MR. MILHOAN: No. Thank you.

MR. PARKINSON: Thanks, Roger. Boy, that was fast. Puts Charlie almost back on schedule since he burned up the time.

Charlie Dick will get into more of the philosophical aspects of how we are going about the business, the IDR criteria, and the approaches to our work effort.

MR. DICK: Let me say that I would like to try and cover three subjects at once here because they seem to be so closely related.

We have identified to us these three subjects as being of some special interest, and it seems to us that what is desired here is some clarification of what we are talking about in some of our terminology, particularly that which relates to safety significance.

And from that, it seems logical to go to one of the other subjects, which is the basis for further reviews. And third, and again closely related, is the item of generic issues.

And then quite apart from those three, a question has been raised with regard to the nature of our commitment list. And I will touch upon that simply in the nature of an introduction for some of the people who will follow me because they will necessarily refer to that. And I will act as something of a springboard for them.

Now, we use a term in our IDR, in our program plan for the IDR, of a safety significant condition. And I think there has been some misunderstanding as to how -- what that means and how that may have been applied or how that would be applied. I would like to try to clarify that as best I can.

First of all, this is the definition of a safety significant condition. "A condition confirmed to exist which results in a loss of safety function to the extent that there is a major reduction in the degree of protection provided to the public health and safety."

How did we come upon that definition and how is it applied?

We determined early in the development of these IDR's that it was necessary to identify the potential for some very major design deficiency which

would require some special attention, special attention in terms of more senior reviews and a reflection probably of the need for reportability.

So what we did, we extracted the terminology from that which the NRC uses in the 10 CFR Part 21 definition of a substantial safety hazard, and that's what this is.

We termed it somewhat -- we gave it a different title, because in addition to the reportability implications of it, we had some internal processing that we also wished to apply to this.

Specifically, we have another review committee which is comprised of outside personnel; that is, outside of the independent design review, that are very senior individuals who would review the nature of this and confirm and further recommend action be taken.

Now, that probably -- that gives people the impression, I'm sure, that this is a very unlikely situation, that we would perhaps neglect other things. Such is not the case.

And what we are -- what we do, however, we actually interpret that definition along the lines indicated here. What we actually propose to do -- and we fortunately haven't had such occasion yet -- we

interpret it in such a way that we would treat a safety -- we would treat a deficiency as a safety significant condition if there were a design deficiency such that a safety related function is unable to perform its intended safety function.

Now, that, I think, is a type of an interpretation with which people might be able to deal a little more directly. There is another definition here which is the one which we encounter most frequently and occupies most of our attention, and that is that of an observation.

Now, please forgive the home-made viewgraph here, but I lost my other one. In any event, this is the definition given our program plan of an observation, and I will discuss how we deal with that in a moment.

That is "A condition wherein the IDR, level one committee believes there is a failure to meet licensing commitments or other safety-related design requirements." And where we find deficiencies, this is the one that occupies practically all of our attention.

Let me say a word here now about the perspective of all this.

What we have here is an attempt to take some

hypothetical design deficiencies and place them in relation to each other on an imaginary scale of significance. Everybody will perhaps have some of their own definitions of how you might rate some of these, but it's clear, I think, to everybody in this room that some deficiencies will be of greater significance than the others.

And highest on the scale up here somewhere would be that which would be termed as safety significant condition. And then not quite at the bottom but somewhere above there, there is a threshold where we would issue an observation. Actually it says observation here (indicating). It would be the threshold issuing an observation report.

Below this threshold would be those items which are of no particular significance, minor deficiencies, typographical errors, small differences reflecting tolerances which have no impact upon a design meeting design requirements.

And this is recognized, I believe, in all reviews that there's a certain amount of those things that occur in any design, and they are not worthy of pursuit.

What is worthy of pursuit are those which are

above the threshold, and those are the ones for which we issue observation reports.

In this hypothetical example, we have simply identified deficiencies A, B, C, D, E, and on out to n here and indicated how these things might fall.

In the case of these above the threshold, these three -- those are deficiencies A, D, and E -- we would issue the observation report, and it would be processed by this level one committee to which reference is made in the definition. And it would receive a thorough investigation and be closed out through a resolution.

These two that are below the threshold; that is, items B and C, we would note in our review sheets. We would not go past them; we would note them. But we would not issue an observation report.

Having been noted, of course it remains as part of the documented record of the IDR.

Sir?

MR. PARKER: Will the final report contain reference to all of these levels?

MR. DICK: Not necessarily. As I say, these two -- I think what you are probably referring to is what would we do about B and C?

MR. PARKER Right.

MR. DICK: B and C would be noted in the review sheets. If the reviewers or the level one committee in particular felt that there was a potential, however, of let us say deficiency B here having more serious implications elsewhere in the design, then it would be investigated elsewhere, and some identification made of that.

If it's a unique or random type of a minor error, it would only remain in the review sheet.

Just to complete the answer to your question, however, for those for which observation reports are issued, those would be included in the final report and essentially the full record of it presented.

MR. PARKER: One other question.

MR. MILHOAN: Excuse me, sir. Could you identify yourself?

MR. PARKER: Mike Parker, Illinois Department of Nuclear Safety.

MR. MILHOAN: We have indicated at the start of the meeting that this was a meeting between the staff and the licensee and Bechtel Power.

And while we will not -- it's a public meeting; it's open to observers. We will provide the

public an opportunity to provide comments at the end of the meeting. But during the meeting the questions will be limited between the NRC staff and Bechtel and Illinois Power.

MR. PARKER: Okay.

MR. DICK: Thank you.

MR. MILHOAN: Thank you.

MR. DICK: Thank you, Mr. Milhoan.

One of my associates called my attention to the fact that probably all of these would be shown in the appendices anyhow.

I was simply reflecting on some of the really trivial things you run into which we might not. But I think that completes it.

But the purpose of this hypothetical example is to indicate the relationship of our threshold of observations to that of a safety significant condition and to try and provide clarification and assurance that all of those observations below this threshold of a safety significant condition would be thoroughly exercised.

MR. LEWIS: Question. Mr. Lewis, NRC.

MR. DICK: Sir.

MR. LEWIS: If you had an observation that was

above that first threshold line, and let's give it one other characteristic; let's say that that observation was one that you needed additional information to find out what the situation was on it, but it was one that if the added information were adverse could lead to a safety significant status.

As an example, your observation No. 8 on 125 volt DC power system in which you do not meet the licensing commitment of two-fault current devices in series, would -- why aren't observations like that put into a potentially safety significant status to trigger the fact that that's one that should get pretty good treatment because it could potentially be safety significant?

Maybe I'm misinterpreting this. The way --

MR. DICK: I understand your question, I think.

The question occurs -- I believe your question is directed at the issue of when should you trigger this activity?

And we would trigger that activity as soon as we determined the likelihood of a safety significant condition. That particular consideration is reviewed at several stages in the processing, as you may recall from our program plan. At any one of those stages,

this could occur.

But please bear in mind that this -- that the initial identification of an observation is made very early in the process of the investigation and evaluation. And we still don't have all the facts.

We haven't, for example, heard from Sargent & Lundy at this point. We try to at -- get all the information we can by the time we issue an observation. But there may be some additional analysis they have to do. It may be that they have some further investigation that hadn't been performed by the time we issued this observation.

So I think in fairness to all concerned and in recognition of the fact that by the time you hit here (indicating), there is a major activity that you set in motion. We believe we are prudent to be fairly certain before we have -- that we have a safety significant condition before we trigger that mechanism.

So we could, as you suggest, term it potentially safety significant, but I'm not sure what you would do with it once you do except flag it.

But still, as I say, as you proceed through the processing of any one of these, say the item E which is the highest rated on the scale here, that's

re-assessed. It is particularly re-assessed by the time the final answer comes back from Sargent & Lundy which is necessary for the resolution of that particular observation.

It's a rather general answer, Mr. Lewis, but does it help?

MR. LEWIS: I think I understand what you are doing.

MR. MILHOAN: Let me ask you a question, because I've been a thorn in your side on this, on the safety significant condition definition.

I understand the reporting aspects of the definition. I understand your limiting it at the system level. In other words, you have a situation where, let's say, a component failed but the system operated correctly.

That would not be classified a safety significant condition if it showed that the system operated correctly?

MR. DICK: I think that would be a judgment call. If it was a minor component, say a light on the enunciator board, which would not be an important thing, we probably would not. If it would be a heat exchanger, shutdown service water system, it certainly

would be.

I think you are referring, however, to major components, are you not?

MR. MILHOAN: Yes. Once you have a component failure, I think you would probably highlight that component failure. I think when we get into the content of the final report, I think we can discuss that differently.

Let me ask another question with respect to safety -- the definition of safety significant condition in the overall conclusions in the final report. This is a what-if question.

Would you have to have a safety significant condition identified before you would conclude that the design process was not adequately controlled?

MR. DICK: No, sir. No, sir.

MR. WARNICK: I'd like to ask a couple more questions along those lines. Bob Warnick with the NRC.

I'm interested in whether or not there's a definite definition of the kinds of problems that you will document when you identify them.

Is there any limitation on what kinds of problems are going to be documented for even consideration to be called observations? What I am

interested in is this lower threshold of problem areas.

MR. DICK: Down here (indicating)?

MR. WARNICK: Yes.

MR. DICK: Yes, we do document all the issues.

MR. WARNICK: What I am wondering is -- and forgive me for asking these kind of questions I ought to know about -- but I am wondering, is there a bound on the kinds of problems that will be identified? Are the people limited in what they can identify as a problem?

MR. DICK: No, they are not limited at all. The issue basically is whether requirements are met. And you will recall our definition of an observation here.

MR. WARNICK: I don't have a problem with the observation.

MR. DICK: Well, this effectively --

MR. WARNICK: It might not make it to the grade of an observation that they are on the lower threshold. What I am wondering is, do you document these, and is this documentation available for the NRC to review?

MR. DICK: Yes, it's all available for you. We have several types of documentation, in fact.

The initial documentation is essentially the reviewer's notes. He has review sheets that he makes

up as he goes along, and he works through the design. That's his logbook, if you will.

And from those review sheets is extracted what goes into the final report, which is a digest, and the English is a little better, and it's served up in a more consistent form than you would expect from individual reviewers all being plowed in there.

And that we would put into the appendix of our final report for you. And that gives you -- gives the reader of the final report a very clear idea of what was looked at, how it was looked at, the documents that were looked at, and the problems if any that were found.

Likewise, if there were no problems found, it gives a very full and complete description of what was reviewed and hopefully would give a feeling of confidence for that design. There can be a very positive side to all of that, too.

MR. WARNICK: It's the things that don't measure up to be called an observation that I am wondering how you were documenting.

MR. DICK: Yes. Somebody asked that question a little earlier -- let me go back to my earlier viewgraph here.

Somebody asked the question here a little earlier, how do you document items such as B and C here? I believe that's your question, too, isn't it, Mr. Warnick?

MR. WARNICK: It could be, or it may not even have made it to B and C.

MR. DICK: First of all, it's in the review sheet. Second, it's probably in the appendix, is where you will find it. We are not going to put typographical errors in the appendix.

MR. WARNICK: We don't expect that.

MR. DICK: But anything which is of technical significance you would find there.

MR. MILHOAN: With respect to the controls that you place on your reviewers on looking at this lower level category of the things that don't make the observation, could you describe what your quality assurance program aspects are to make sure those -- you have that level of review so that someone is looking at the question of the threshold for when these individual items are made observations and not relying on an individual reviewer?

MR. DICK: Sure, sure, we can do that, and I will give you an overview now. We will also come at it from

another direction. Mr. Parkinson here will describe some of our procedures.

When I respond to you, I am -- I respond in the broadest sense of the quality assurance program because the quality assurance program in our lexicon is a very specific type of a thing.

I think your basic question is: How do we provide assurance that these various elements are being thoroughly reviewed by the reviewers and the system managers and so forth?

We have a specific procedure, first of all, for processing each observation. It requires that the reviewer develop his review sheet, and that review sheet be in turn reviewed by the system manager, such as Chuck Jordan or Bob Powell here, who will sign off on it.

And where the reviewer finds that he has a potential observation, he will fill out a form, and that will be processed through the level one committee and so on up.

What you are interested in, I believe, is that preliminary work to assure that that review is taking place. That's the primary avenue in the checks that are applied.

Now, in addition, we have on our staff quality engineers, and we also are audited by our quality assurance engineers who audit the programmatic aspects of this to assure this process that we have identified is in fact taking place.

And they have an audit program which they follow. There's a schedule, and it is followed. And the program operates, I should say, in a manner similar to a quality assurance program in design activity.

MR. PARKINSON: If I could, Charlie, I think what you are looking for is there's a detail history of the reviewer's participation on the project.

Charlie has a format of a reviewer's sheet that he uses and identifies all the work that he has looked at, his contacts, and his assessment. And this may or may not evolve into something more significant; to wit, an observation.

MR. DICK: Yes. This is the form that a reviewer fills out for each design he reviews. You can see the system and the subject reviewed or identified. Requirements are referred to, and then a description is given through here (indicating). He signs it, and we have a procedure where it's also signed by the system manager.

MR. PARKINSON: I think in the vertical reviews, the individuals who make their presentation will show you some samples being filled out or having been filled out.

MR. DICK: This, I should add, is part of the internal records of the IDR. It's in the reviewer's handwriting or his printing, and it's available for the inspection of the NRC at any time.

MR. LEWIS: Just one more question. Mr. Lewis, NRC.

Below the observation threshold items, which I think I have seen you documented, how do you handle the possibility that -- where you get some that are below that threshold but low and behold you get a lot of them and you get a lot of them across different systems where it's the same problem? The integrand puts you below the line but the integral puts you above the line.

MR. DICK: I know what you are driving at.

In other reviews we have had such an experience where it appeared that the frequency of these or the recurrence was something worth looking at or where a deficiency in the design we were reviewing might have been below the line, but if it occurred

elsewhere, perhaps it would be above the line; that is, an observation report might have been warranted.

What we do is to evaluate that when we come near the end of our review to implement our task 4, which is broader implementations. And we go back, and we take a look at this, and we say, "What do we have here?"

Now, one of the conclusions, I hasten to add, that you can arrive at is that if you have a number of deficiencies which are trivial in nature for the systems you are looking at and you ask yourself what does this mean to the systems you didn't look at, well, it may not mean anything at all.

It may mean you had more trivial observations over here (indicating) where somebody can't spell a technical term or something, and you have more of the same.

But we do look at it. That's the point I'd like to leave with you.

MR. LEWIS: So they are not just documented. They are documented and analyzed from the pervasive potential that they may have?

MR. DICK: Yes, sir. My project manager is prodding.

I would like to move from there into this area that we were edging up to of how do we deal with the question of extending the reviews beyond what we immediately looked at.

The reviewer finds a -- let us say the reviewer finds a deficiency, and he says to himself, "What does this mean elsewhere?"

And just to give a little background, I would like to revisit a viewgraph or two that Mr. Amaral used in our June 28th presentation in which he indicated how we address this issue of broader implications.

At that time Mr. Amaral described the various methods for generic -- for assessing generic problems, the question of acceptability standards and how it was important to balance both strengths and weaknesses, looking at the positive side as well as deficiencies, and how informal methods are frequently more effective in situations of this sort than the more structured methods that could be implied, say, in a manufacturing operation.

At the time Mr. Amaral also pointed out a typical way in which we would extend this to other systems. Now, this has been augmented in a manner which I will mention in a moment. But the typical way

we would do this would be we would review other applicable areas in our own sample system; that is, extend the vertical review, and if warranted, and in many cases, we would request S & L to go and conduct their own investigation and advise us as to the applicability for areas where we had not reviewed.

MR. LEWIS: Question on that second item there. That is sort of a self-evaluation?

MR. DICK: That is correct.

MR. LEWIS: What does Bechtel intend to do in that area?

MR. DICK: Thank you for bringing me back, because I almost skipped what I said I was going to discuss.

We would verify that this in fact has been done, and we would be satisfied with it. And I believe we committed to that in our amended program plan which we submitted to you.

I should also add that in some areas it's conceivable that we could recommend to Illinois Power that we or others conduct investigations into some of these other areas, depending on the circumstances. And I believe we made mention of that in the amendment to the program.

Now, we were asked the question of what are

some of our criteria for extending the reviews beyond what we were looking at; that is, we find a deficiency. Now, what criteria does a reviewer use to go beyond where he is?

Well, the first of these criteria is that it should have implications for other safety related areas.

The second is that there should be a likelihood that the deficiency found in the area in question is transferable to one of these other areas.

And third, of course, that it is significant in that it might degrade the performance of the other safety related area.

These three criteria we would apply either in a horizontal or in a vertical sense. That is, we would look at other areas in the vertical system we were looking at or we would ask Sargent & Lundy to look at it in other areas or we would take some of the other actions which I just described, look at it horizontally.

MR. MILHOAN: The way you used the term "significant," you did not use it in the context of safety significant condition?

MR. DICK: No, sir. We really have -- we really

issued an instruction a little while ago to the effect that it could significantly degrade the system performance elsewhere.

MR. MILHOAN: Okay.

MR. LEWIS: Question, Mr. Lewis, NRC.

I didn't hear in that criteria for further reviews -- maybe I overlooked it -- the input from your horizontal review or horizontal reviews.

Suppose your horizontal reviews of the Sargent & Lundy design process from four or five of these other background studies show a trend problem area that isn't encompassed in the current vertical reviews and other reviews that you are doing.

Would you intend to make that a source for further review?

MR. DICK: Yes. But in a way that I am going to defer on to Mr. Cahn. Mr. Cahn will describe how he handles -- how those horizontal reviews are handled and, I believe, will respond to your question at that time, if we can defer.

MR. CAHN: That is correct.

MR. DICK: We were also asked to describe briefly just how we approach potential generic issues. What are we talking about in a generic issue?

What we are looking at in dealing with a potential generic matter is whether or not a deficiency, design deficiency that we come across could occur in the similar form elsewhere?

And this is simply an expansion on some of the things we have already discussed. First of all, we have to define the nature of the problems. Is it a computer problem in the software, or is there a review problem or something of that nature?

Then we have to deal with this thing in an appropriate manner. If we have a series of deficiencies, let us say, in a manner of welds, then we would go down through a sequence which would be appropriate to something in which there were multiple deficiencies.

If, on the other hand, it was just a single one, we would still ask ourselves the question whether there's a generic problem here or not. But we would skip the items of classifying and re-occurrence and going to basic -- and those of basic causes, and we would jump down the row here (indicating).

Now, let's consider the one where we have some multiple deficiencies perhaps in welds or something like pipe supports. We would classify these

observations. We would try to classify them as to whether there were a problem in code compliance or one in just interpretation of the requirements or whatever. And we'd note the re-occurrence.

Clearly, if it just occurs once or twice, in many cases it might be simply considered as a random event. Or if there was a high proportion of re-occurrences, 10 percent or more -- forget that percentage. I don't want to establish a threshold. That's a judgment call.

But if it was recurring significant enough, we would make note of that and attempt to establish some of the basic causes. Then we would proceed to analyze those things and dig even more deeply where we found a predominant cause and determine whether or not there was a general generic problem.

At that point we would initiate an investigation into other areas beyond those which we had examined.

This is a pretty well accepted technique, I believe. It's rather general, but the message I would like to leave is that we do ask ourselves the question on each of these observations: Is there a generic matter involved here? And in many of the observations

we send forth, we ask Sargent & Lundy to give us some assessment of their own in this respect.

That's the end of what I had intended to present formally. If there are any questions, I will be very pleased to respond to them now or later on.

Before you ask them, I must say that I have received a note, we are now 35 minutes behind schedule.

(Laughter.)

MR. DICK: Mr. Jordan, I will leave it to others to help make it up.

MR. PARKINSON: Thanks, Charlie. We'd like to get into the vertical reviews. This is kind of the meat section of it. Chuck Jordan will be our initial presenter.

MR. JORDAN: I think maybe in the interest of making up time I'd like to change the format a little bit, if I may, and request that you hold off your questions until I finish my presentation. I think that will be the best way to gain a little time.

Mr. Parkinson showed this slide previously. Now, this is basically the elements of our vertical reviews to assure licensing commitments are met. In order to do that, of course, we have prepared a commitment list for each of the reviewers for each of

the systems in each of the systems; have gone through that commitment list, and from that and other input they have made their review sheets or checklists, rather.

Of course, in addition to reviewing the commitments, we are reviewing the design for design adequacy and also making an assessment of the design process.

And as a result of all that, we are drawing the broader conclusions.

Step one was to prepare the design checklist for each and every system in each of the disciplines. This happens to be just one of the checklists.

This is the electrical system checklist prepared by the electrical engineer that's reviewing the electrical class 1E ac system.

As I mentioned before, there were a number of inputs to preparation of this checklist. The Clinton FSAR was the primary document used to prepare the checklist. The other documents used, the other input used were the NRC standard review plan and Bechtel experience and knowledge as a designer of systems, and our Bechtel experience in other independent design reviews, both in-house and for other organizations.

You will notice that the checklist does include the three aspects of the vertical review tasks; that is, review of design requirements, design adequacy, and the design process.

From this checklist, Mr. Dick mentioned the review sheets. From this process, each of the reviewers begins to prepare his review sheets. Each of these items in the standard review plan has a breakdown of standards and guides and reg guides, high EEE standards, ASME standards, et cetera, that have individual requirements in them.

So that this in turn leads to a further breakdown of the checklists on a review sheet.

One of the aspects of the review sheets is the fact that the designer or the reviewer has the ability to follow his nose elsewhere, where his experience he feels can lead him into other areas that may be of suspicion or he knows it from his own experience or there were problems on other projects, or what have you.

And I think that's the really the essence of the quality of our review, and that's the experience of our people.

This is just an example of some of our key

people, and you can see the experience levels. It represents an awful lot of background in both engineering and specifically nuclear engineering

MR. MILHOAN: Sorry. I will hold my question.

MR. JORDAN: I will come back to the slide, if you wish.

Mr. Lewis had specific questions about what we review in the sense of calculations. This is an example of the specific calculations we reviewed or are reviewing for the class 1E ac system.

Basically it represents all major calculations involved with that system from the electrical systems point of view. Of course, there are certain mechanical aspects. Diesel generator building aspects are included in the tructural review and other calculations that are reviewed for the 1E system that are not specifically electrical.

Mr. Lewis was also interested in how we review calculations. This is a little more difficult, but I will try to hit the highlights of how we review a calculation. And I have some slides here of the various calculations not meant to be an example of exactly what we review but mainly to identify the process itself on what we review.

The first two items are to review the assumptions. Are the assumptions made in the calculation or to set up the calculations valid? And are they verified assumptions? In other words, are the proper references given in the calculation to verify that those assumptions are correct? I have a typical one here.

MR. DICK: May I interrupt you just a moment here to invite the attention of the attendees to this meeting to a point of procedure?

You will probably immediately notice the stamp at the lower right-hand corner of that viewgraph. That is a proprietary stamp, and we have been given dispensation by Sargent & Lundy to reproduce this only for the purpose of the presentation but not to reproduce it for inclusion in the printed record.

Mr. Jordan and Mr. Powell will have several of these sheets that will simply clarify their presentations. But these are proprietary documents, and accordingly, they will not be part of the viewgraph handouts that we are sending out. Please understand that.

MR. JORDAN: As I indicated, this is only to show the kinds of things and also to give everybody a

feeling for what a calculation really looks like. They are not always the neatest things, and I'm sure they are kind of hard to read from the back of the room, this particular one.

But this particular slide will demonstrate several items that I had on my previous slide. Number one, the assumption here -- "The following assumptions were calculated from data given in the standard."

That's fine. We reviewed the standard and said, okay, that's a valid reference. Also there's a case down here where full load transformer losses are estimated, and we know from our experience that a 750 kva, per 1,000 kva, 15 percent is roughly a valid input or valid assumption.

So those are the kind of things that we looked at from that particular calculation or at least that will demonstrate the first two items there.

Now, I may have to jump around a little bit here in slides because I couldn't find the sheets that came together to demonstrate in order. And you will find in a review that that's generally what happens. Nothing ever comes in order. Nothing is easy. I will hope to demonstrate that without too much pain.

My next slide here should identify a couple items here. That would be Item 4C, which is the consideration of steady state and transient conditions. This is a case where the steady state which is no load/load, and the starting conditions are illustrated; steady state being the no-load condition, transient being the load and the full load and the starting conditions.

Now, here is a case, the calculation generated a question to Sargent & Lundy, "What about the transient conditions at this level?"

The next slide will illustrate -- sorry for shuffling back and forth here, but I couldn't figure out a more reasonable way to do it -- the third item under 2 here, verified inputs and references. Here is a case, there's a note on the bottom of the calculations, references a letter from the client to Sargent & Lundy with a date that the reviewer did get a copy of or it did at least see at Sargent & Lundy's office. It verified that these assessments of the switch air voltages were in fact given to him by the client.

Here is a case that we attempted to or I'm attempting to show this item here, computer program

verification checking -- checker signatures, and there's a couple other -- internal design standards, which are industry standards.

This next calculation is an example of that. Here is a computer program. Here is a verification analysis that's referenced for that particular computer program that was used to calculate this voltage drop program.

The reviewer did in fact see this verification report and check that the verification was done in the correct manner. This is an example of internal design standards that are referenced on the S & L calculation; also an example of industry standards that are referenced, C37.06. Again, here the checker's signatures and review which indicate it was reviewed in-house.

And I believe I have one more here, two more.

Now, this slide illustrates other design documents that are referenced in the design. This particular calculation referenced a bunch of single line diagrams, key diagrams, other calculations, a Sargent & Lundy standard, another calculation, several schematic diagrams.

So these all entail the reviewer's total

review. In order to review this calculation, he has to review all these reference guides and standards and documents. And that's all documented on his review sheets.

Now, this is a case where the reviewer or an example of where the reviewer verified the proper formulas were used, proper application of the formulas, made some spot checks on mathematics on the calculation.

Here again I wish to point out that the reviewer does not do a total verification of the calculation. He is only spot checking it, and he is checking the results, the final results for reasonableness. He does not perform a calculation verification.

And I believe that's the end of my presentation. I'm open for questions.

MR. MILHOAN: I have questions with respect to -- staff may have other comments with respect to mine.

I'd just like to note that we are not going to have any significant questions in this area because we are doing a two-day inspection visit at Bechtel Thursday and Friday of this week, and we will cover the vertical reviews in considerable detail when we are out

there Thursday and Friday with our inspection team.

In that light, I do have a two-page handout on the plan implementation visit that I would like attached to the minutes of the meeting. It doesn't give a detail of the inspection plan, but it gives an overview of our visit out there.

Bob, do you have any --

MR. WARNICK: No.

MR. PARKINSON: Good show, Chuck. Put us back on track.

Bob Powell will follow through with the mechanical vertical review.

MR. POWELL: I will follow along with what Chuck Jordan just said, and I would just like to point out some things.

This is a checklist to the mechanical area, mechanical system, which was the area that Mr. Milhoan asked about earlier, for the shutdown service water system.

We have the FSAR and related document review where we look through these documents that have established the commitments and follow-through also in the design documents that would carry through the commitments into the design.

Chuck Jordan carried through the calculations quite thoroughly, so this states how we go through the calculations. This states in more detail what we look for when we review the various design documents, the documents that are actually -- actually result in the installed product in the plant.

The only one of these that actually is not used for installation purposes is the design criteria. You will have copies of all this. This is a list of the checklists that have been prepared. There are some sublists under these which would be HVAC and some similar type documents, but these are the basic checklists.

Under the mechanical, we have the system which I reviewed with you. You have one for mechanical layout, for piping engineering, piping stress analysis, pipe supports. You have checklists for civil/structural.

Electrical, we have the system checklist and for electrical layout; one for control systems. And under equipment qualification we have one for the seismic, one for the environmental, and one for pump and valve operability.

These are the types of calculations that we

are looking at in the mechanical areas. The pressure drop calculation, set point calculation to establish, for instance, what a pressure would be at a particular point in the system; heat loads for determining what the requirements are for HVAC, et cetera. So we could maintain environmental conditions, let's say, in a compartment, pipe wall thickness calculations, piping stress analysis, pipe support.

In the civil/structural area, we are looking at the pump house and the desiel generator and control building in the civil/structural area for structures. There we are liking at seismic, load combinations, foundation and superstructure concrete, the effects of pipe supports and other loads on main members, soil mechanics, duct, tray, and conduit supports.

We are also looking at the pipe strength for the buried piping lines. In the ultimate heat sink, we are look at the quantities, the soil mechanics, percolation through the dam.

Instrumentation and control, calculations we are looking at the set points. You notice we have the set point up here. This would establish, for instance, what a pressure would be at a point. The instrument and control man would take it and using that, knowing

the characteristics of the instruments, drift, et cetera, he would come up with the actual set point for the instrument.

And the -- under equipment qualification, we are looking at the seismic qualification reports, and we are looking at the analyses of calculations for the pump and valve operability.

I would like to quickly go through some of the -- just a couple of the calculations to point out in the mechanical area similarly what Chuck Jordan pointed out in the electrical area. I'm sorry the reproduction is not all that good.

As you can see, what we look for in the calculation, they have established what the purpose is. We review that. And the method, we look at the method. And we look at any references that they might have.

This actual calculation here is for a set point for two instruments. We are looking at it to check the reasonableness of the calculation that the -- to see that the proper references have been used.

We are not going through and doing a detailed check of the arithmetic. We are not verifying the arithmetic.

This is this is just a second sheet of that

calculation for the second instrument come out with . . .

This next calculation is more detailed. This is for establishing the head of one of the shutdown service water pumps. Well, the first thing in all the calculations, we look to see that it is properly signed off; it's been checked.

Then we have the introduction. Once again, we go through and see that the purpose is pretty well established, and they give the various requirements here for the calculation. Notice they have the references.

We will go back and check each and every one of those references to see that the references are correct and that any information on the references -- let's say it is another calculation that may have been done -- that that has been properly brought over into this calculation.

Here on this continuation, after they have established the references, they give the procedure that they are using to perform their calculation. And they are actually performing the calculation here, going through the arithmetic of it.

This is just a continuation of the

calculation, establishing they have got the -- done their pressure drop calculations. They are doing their elevation for requirements for the head.

And finally, we arrive at the conclusion of the calculation. And then we have the term here "Conclusions." They give the reasons why this is satisfactory. And on all the conditions down here show that this calculation was quite clean. It was very easy to follow. So this is -- I'd say this is a typical calculation in the mechanical area.

That concludes my portion. Are there any questions?

MR. LEWIS: One question. Of course this is going to be hit fairly heavy in the follow-on review Thursday and Friday.

I think I get a picture where everything is okay when you go through the calculation.

MR. POWELL: On this particular one?

MR. LEWIS: On any of them. In a case where it isn't verified, where the verification looks flaky, where the judgments look flaky, what do you do in cases like that?

MR. POWELL: We go back and question it. If we can't get -- if we find out -- we figure there's

something wrong with the calculation, then we are going to, as I say, go back and question it.

And if we don't get a satisfactory answer, it could result in an observation.

MR. LEWIS: So you would --

MR. POWELL: It could result -- it could be -- it could actually result in any one of three things.

It could be a problem with not meeting a commitment. It could conceivably be an adequacy problem. And it also could be a design process problem. But it would depend on what the problem was with the calculation.

MR. LEWIS: Including arithmetic?

MR. POWELL: Yes. But once again, we are not doing -- we are looking at the calculation to see whether or not it's reasonable.

If the arithmetic is off by some relatively small percentage, it wouldn't be -- we are not checking that calculation for arithmetic. We are seeing that they have -- that the references are correct; that the criteria for the calculation, the parameters of the calculations are correct; and that they have come out with a reasonable answer. And that's what basically we are looking for.

MR. DICK: Excuse me, Bob. Could you clarify the extent to which we review for the mathematics on it?

I don't think you meant to leave the impression that we completely ignore the mathematics of it. We do make spot checks. But it isn't a complete arithmetical check.

MR. POWELL: I don't want to leave anybody with the impression that we don't look at it. But I don't want everybody to think either that for every calculation that Bechtel has gone through and checked the arithmetic and verified that calculation, because we haven't.

If we see something wrong, we will go back and run a check. But we are not -- we are not doing it on each and every one of these.

I didn't want to leave you with the impression that we were. But, yes, we are making spot checks but not each and every calculation.

MR. PARKINSON: Thanks, Bob. I think this is a point of record. At the conclusion of our event today, we will turn over these reproductions of the calculations to Sargent & Lundy for their disposition.

Well, we are at break time. And let's see. We are 20 -- 30 minutes behind. What is your pleasure

on break? We were scheduling 20 minutes. Shall we reduce it to 10?

MR. MILHOAN: Let's reduce it to 10 and start back at 1:20.

MR. DICK: Done.

MR. PARKINSON: Let's do that.

(A short recess was taken.)

MR. PARKINSON: If we are all assembled, next on our agenda is the presentation by Bob Cahn on the horizontal review. If somebody can turn down the afterglow back there.

MR. CAHN: Good afternoon. I will try and make this brief. And I think the horizontal review is relatively a simple review, and it feeds the vertical review.

And defined in our program plan, the horizontal review is that portion of the IDR which uses issues from other reviews as a base for evaluating the design process; fairly straightforward definition. But there's some terms in here I'd like to define further.

What do we mean by other reviews? Well, it's just those reviews as specified in the program plan and is deemed appropriate by Bechtel which have potential relevance to the Clinton design process.

And in our program plan is specified the first five reviews that I have listed up here. And that's the Teledyne Engineering Service independent design review of LaSalle.

Let me clarify one thing, and I think it's a point worth clarifying but not too significant.

Here you can see it's called an independent design review. Here it's called an independent design verification. The NRC has a different title for it, integrated design inspection.

I think those acronyms are interesting, but here I am just referring to them as reviews. I think the acronym companies of the world have prospered from this. But they are, in my opinion, all the same.

Cygna Energy Services did an independent design review of Fermi. We have talked about IDI of the NRC already. They did an IDI of the Byron plant. We followed that IDI with a Bechtel review of Byron also.

INPO, the Institute of Nuclear Power Operations, did a review of the Clinton Power Plant itself primarily concerned with the construction aspects but did have some aspects related to design that we have picked up.

And in the program plan and in the initial letter from Illinois Power that was sent to the NRC, it was mentioned Bechtel had the right to review other IP reviews as appropriate. And we have done that, and in a moment, I will discuss that a little bit.

Now, the other part of the overall definition that I would like to talk about a little bit further is the issues. What issues are we reviewing? And then I will get into how we are reviewing them.

Simple definition of the issues is: Are those concerns concerns raised during the conduct of another design review which was determined valid by the reviewing organization?

So upfront we did not cut out any of the issues. We are looking and we have a set of criteria by which we are applying these issues. But we have looked at all of the issues that are valid from the other reviews.

This is just a real quick summary of the total issues and those that we have deemed potentially applicable to Clinton. I must say that in -- this is as of sometime late last week. So this is an update from the progress report, but the meaning of the numbers is still the same.

These are the totals. They total up to about 340 issues came out of these first five reviews. We have found through our process that about one-third of those issues may be potentially applicable to Clinton. That's not saying that there are problems on Clinton. It's just saying that those issues should be reviewed in our vertical review on Clinton in our scope to see if those problems exist.

Let's talk a little bit about the horizontal review process. Here are the issues from the other reviews, all 340 of them. We make a decision -- and that is, the horizontal review group which I am responsible for -- decide if they are applicable to the design process.

And here I have defined or we have defined the design process as quite broad. We don't want a very fine screen to review these issues. I guess for want of a better definition, I define the design process as that compilation of management or technical procedures that commence with development of design input and conclude with output of a design document.

Anything that we feel falls into that broad definition -- and that's equivalent to the definition given in ANSI 45.211 -- if it falls into that

definition, it's yes here; it's applicable to the process, and we go further.

If no, if it's out of that definition, we document the basis for our decision, and we close that item. That item never goes into the vertical review.

If it's applicable, then we have kind of broken our review of the horizontal issues into two parts. For want of a better term, I have called it trend analysis. And here I have called it the technical review.

The trend analysis really is looking at the cause, the basic cause of the problem. What in the process has broken down or potentially broken down to cause this problem?

Example, documents weren't clear. Interface between groups wasn't rigorously controlled. The technical issue deals with the technical problem itself. The weld wasn't long enough; the valve was installed upside down; the valve was painted blue.

So I'm looking at the cause and technical issue in parallel. Basically we handle it the same way. We look at the technical issue or the cause is applicable to Clinton.

Every design plant has somewhat unique

procedures and somewhat unique design. We look at those issues if they are applicable to Clinton. If not, again on our review sheets we document the basis why they are not applicable, and the issue is closed.

If they are applicable, we review the Clinton design and design process to see if that issue is a problem on Clinton and how they address that issue.

Then we make the decision, which is I think the most important decision here: Is the Clinton design acceptable based on the review of this issue? If it is, we document it, and close the item. Is the cause of the issue found on Clinton, is it a problem? Is the Clinton process acceptable? If it is, we document it and close the issue.

In both cases if we come up with an answer that's no, that the Clinton process or the Clinton design is not acceptable for the reasons talked about here previously; the adequacy, the process, or the requirements, then we pass that issue into the observation process. And that issue will be specific to Clinton, but really the germination of that issue will be up here (indicating) from a horizontal review.

I think it's a basic process. It's not too complex.

Let me just show you how we document this, what's available in our records, and maybe open the floor for some questions.

For each issue, 340 or whatever the number comes out to be, we have a review sheet. And we have our own unique number, group of reviewers, horizontal reviewers as they may be, and we fill out this form.

Since the acronyms and the numbering system gets quite complex when you go from one independent review to another independent review to a real plant, we have put the other review identification number here (indicating) so that we can cross reference back.

We have put the name of the obviously of the document being reviewed, which is Teledyne report so and so, the title, and this reference number becomes important because, like I said, it gets quite complex.

We describe the issue; valves are painted blue when they should have been painted red. We try to determine the cause from the report that we are reviewing, from Teledyne's report, from Cygna's report, from the NRC report.

Again, talking to a group, that sounds very easy, but a lot of times the causes aren't clearly stated. No cause is stated. Every independent

reviewing agency, including the NRC, has their own ways of doing it. And we try to establish the attributed cause from that report. Often you will see "Not Stated."

Then we decide, as I showed you before, if it's applicable to the design process. If we mark a no here (indicating), we then skip down, and we document it in this spot here (indicating). And I sign it as the horizontal review leader.

If it's yes, we decide if it's applicable to Clinton. And this could be either done by the horizontal review group in some isolated cases, but in general it will be decided by the vertical review group because they are the ones that know the details of the design of the systems in our scope for Clinton.

This is another important point relative to documentation. If this block is yes and this block is yes, our procedures call for that it would automatically be reviewed by the reviewer in the vertical reviews and, therefore, documented on his review sheets.

Now, a lot of times, it is my opinion, that things out in the horizontal review will be reviewed by the vertical review whether we had this animal or not.

The orientation of valves, that's a very significant thing in stress reports. That would be reviewed whether it was a problem on Fermi or anywhere else. So we would review that. It just helps what we have in parallel with the horizontal review.

So most likely this review sheet would have already been done. He would just cross reference that particular issue from the horizontal review to his review sheet, mark the review sheet number, and give a summary that the valve orientations were reviewed, no problem exists, or we'd have to open up an observation if there was a problem.

These will come back to me completed or at any point they stop, sign them off, logged, and kept on file.

Any questions? There are a couple more slides, but I will take some questions, and then I will go further.

MR. MILHOAN: On October the 11th I received a letter -- it's to the distribution list also -- but I received a letter from Mr. Hall of Illinois Power indicating that Sargent & Lundy had performed an analysis of the independent reviews of the S & L design activities.

My understanding, and correct me if I'm wrong, Bechtel is doing an independent review of these activities? It is not relying on the Sargent & Lundy report that's referenced?

MR. CAHN: The Stone and Webster --

MR. MILHOAN: No. I have got notice now that Sargent & Lundy has performed an analysis of the independent redesign reviews.

MR. CAHN: I can explain. We are completely informed. We are doing a completely separate horizontal review. Our program plan was written with no thought of what Sargent & Lundy had done in these horizontal reviews.

We do have a copy of Sargent & Lundy's results. I don't know if they called it a horizontal review; their look at these other processes.

We are using that as a reference document only to make sure that we have covered all the items and that we know how Sargent & Lundy has handled them. But we are looking at the vertical review as though that document does not exist.

MR. MILHOAN: You mean the horizontal review?

MR. CAHN: No. We are looking at the horizontal issues in the vertical review as though that

Sargent & Lundy document does not exist.

MR. MILHOAN: Let me ask you a question again. In the horizontal review, you are conducting the horizontal review as if the Sargent & Lundy document does not exist?

MR. CAHN: That is correct. That is correct.

In fact, we would have done this horizontal review had Sargent & Lundy not done a horizontal review at all. This is our part of our program plan. It just so happens they have done it too.

MR DEL GAIZO: Ted DelGaizo representing the NRC.

What happens if you come through all your blocks and you get to the point of it is applicable to Clinton and all these other things but has nothing to do with the scope, like DC battery loads or something that's clearly outside of HPCS and things that you are looking at? What happens to that item?

MR. CAHN: Well, let me answer that -- let me put up these two slides, and if it doesn't answer your question, I will come back.

Let me try to say, what we have tried to include in the horizontal review applicability -- and this would really be related to, is it applicable to Clinton. Let's just assume that it's in the design

process for now. And the other slide will address that a little bit.

The obvious answer is or the obvious thing is: Is it directly within the IDR scope? We have the three systems that we have talked about. We have common requirements of HELBA/MELBA, fire protection, and seismic II/I.

If an issue on the Fermi plant directly related to that, that's an easy transfer. We look at it.

In some cases that has been the case, but in general that's not the case. And we have picked other systems with that in mind.

So what we really need to see, is it applicable or this word could be transferable to the Clinton IDR systems?

The judgment we are making there is if the structure, system, or component or very similar item is part of the systems or associated with the system we are reviewing, we will look at it. Let me give an example.

Let's say they had a problem with the seal on the RHR pump on Fermi. Well, we have shutdown service water pumps that we are looking. So we would look at

the seal in the shutdown service water pump for Clinton to see if that problem reoccurred.

We would not necessarily -- it wouldn't be our first avenue to go look at the RHR pump. We are looking at that component applicable to our system. If a transfer switch in some other system didn't work, we would look if that transfer switch was found in our system and review it there.

So we are taking that system component structure back to our scope. We are also looking, let's say, a problem -- and it's happened on the other reviews -- a problem is with a document; it's with a code or standard or reg guide on the other plant, but that reg guide or design or codes document is being used in the process for the systems within our scope. We want -- or misused.

We want to see how it's used and if it's used properly within our scope. So we are -- when I say within our scope, I refer back to those three systems in common requirement. So things out of our scope on other projects we are applying into our scope on Clinton. Again, not always a smooth fit, but we are trying to make that fit as best as possible.

The other slide --

MR. LEWIS: Question on that.

MR. CAHN: Sure.

MR. LEWIS: If it doesn't meet your scope, your vertical review scope, but it looks like a baddy or on you see it ultimately occurring in these other horizontal reviews, do you look at it even though it's not in your vertical review, or do you shunt it out if it's not part of your vertical systems?

MR. CAHN: I haven't come across too many like that. I suppose if it was completely out of our scope -- I'm trying to think of one -- and most likely that doesn't occur because we picked -- I guess Chuck just mentioned.

If it happened to be a problem on Byron -- it's not a problem -- they had continuous problem with steam generator design or they had to put in another nozzle or something, that's obviously not related to a BWR. That would be out of our scope.

I'm trying to think of one that we looked at. Example -- cooling tower is not a good one.

In general, we haven't come up to that. I suppose we have to make a decision when we got there. But my inclination is that we would not look at that. We are looking at things in our scope, not bending over

backwards, but trying as best we can to find if that exists in our systems. We have not gone out of our scope based on the horizontal scope.

We have looked at 340. None pop into my mind, but one example that might help you. We have found several cases where calculations independent of what they are reviewing, independent of the system, calculations don't properly list assumptions, calculations use engineering judgments, things that are found in the IDI.

We have taken those issues -- and I will explain in the next slide -- and lumped them into more of a generic horizontal issue and passed them to the reviewers.

So those kind of things we are looking at in the vertical review that have come out of the horizontal review independent of the scope. That's more like a process problem.

Let me show you this other slide, and then I don't know what my time frame is.

Here is what we have excluded from our review. Obviously that's out of scope.

We are not looking at construction per se, QA, or other organizations on other projects that have

nothing to do with Clinton.

Example, Stone and Webster was involved with the Detroit Edison building of Fermi. We are not looking at problems within Stone and Webster's design per se on Clinton.

If there is no indication of a discrepancy, error, or deviation, we are not chasing that into the vertical review.

A lot of times that happens. A lot of times it turns out that the issue is really more a request for information to Cygna, Teledyne. They send them a piece of information. They said, "Oh, my gosh. There's no problem," and the problem went away. We are not chasing those.

If it's a duplication of other issues being reviewed -- for example, the one I gave you on calculations -- we have lumped those generally into one item, and we will review it once.

Valve orientation may come up in three reviews. We are trying to send that problem over as one review sheet looking at a valve orientation. And my documentation cross references back to one horizontal review.

If it's an isolated occurrence and pertains

only to a specific instance or detail, then we are not reviewing it. This happens, again -- usually the Cygna's or Teledyne's or potentially the NRC says "This is an isolated random occurrence and had no significance." We are not chasing random isolated occurrences.

If it's an administrative concern, we are not looking at it, or if the concern was judged to be invalid in the original document reviewed, this doesn't apply 100 percent across the board because there were some ruled invalid that we felt may be applicable to Clinton. And the reason they were ruled invalid might not apply to Clinton, so we are looking at them. It's an isolated couple of cases, and it's available in my records.

Any other questions, or any questions? Maybe I should have just showed those slides. Thank you.

MR. PARKINSON: Thank you, Bob. It's moving along. I am just going to, as an update, to identify the -- three of the IDR procedures that we are following on the project, just to kind of bring everybody into focus as to controls that we are utilizing.

You have heard -- already heard a description

of the development and the employment of checklists, review sheets, and observations. These are all part of review process describing the method to be used by the reviewer to document the performance of the review activities and the results obtained.

These are the various forms in which we are documenting our effort. I got to procedure No. 2 before I got to 1 here.

Procedure No. 1 covers communications. And in that we have a protocol requirement on this IDR which makes it somewhat critical on how we conduct ourselves in the communications.

The modes include letters, telecopy messages, significant telecoms which we document, conference notes, RFIs, requests for information that we send to Sargent & Lundy, requests for documentation from Sargent & Lundy and various data transmittals that they in turn send back to us in the form of drawings, calculations, or other usually proprietary data.

The controls that we invoke on these, in original communications, letters, we serialize so there's a continuing chronology controlling them. All transmitted documents are logged, and the logs are kept up to date.

And Sargent & Lundy proprietary documents are held under a very discrete control in our offices. We reproduce them under an agreement with them to be destroyed or returned to them at the conclusion of the project. And all their document is rigorously logged and kept accounted for.

In the distribution, we follow the requirements of the IDR protocol. All transmittals and forms of documentation, communication documentation, are maintained by the IDR team in a location accessible to the NRC for their examination at any time.

I am going to flip a little bit between two slides here. We are going to talk about the processing of the observations, and we've essentially gone through the reviews, the vertical and horizontal review, we touched base on it.

But we follow this mechanism, similar for what Bob Cahn had shown you for his horizontal review activity.

The reviewer prepares the review sheet. And if an observation is developed, we go through this process, initiating a POR, submitting it to the system leader who formalizes the existence of it by obtaining a file number.

He sanctifies the observation, submits it to a level one committee where we sit as a body and adjudicate it; one, it is valid for further discussion and review; or we consider it invalid, send it on completing a resolution report which results in a completion record.

If it's a valid report, if it's a valid concern, then we make a secondary determination whether it's safety significant, which Charlie Dick discussed earlierthe definition thereof.

If we don't consider it safety significant, then we again pass it on through the process, pass it on for the resolution, and preparing eventually a completion report.

A safety significant report, hopefully we don't see one of those, but that would go on through the process of notification to Illinois Power and Sargent & Lundy that we in fact feel that we have something that's significant. And we would prepare that report in event that it is considered valid for a review by the level two committee, which is the body of persons who are not a direct part of the IDR team but are on our roster for counsel and review in this particular situation.

I think the chart speaks for itself. And it is included in, of course, in our program plan.

And this is just, again, a summary of the various levels that we go through here. The design review by the reviewer, committee review, our transmittals in the event of an observation to Sargent & Lundy for their response and how it's to be resolved; concurrence about the Power Company that in fact this response or resolution does meet their approval; and then the completion report is prepared.

And as we indicated earlier, from a production standpoint as of October 1, we only had one observation issued and presently under review. So much for that.

I think next was the add-on after our July 10 issuance of the program plan, the walkdowns. And Ed Hughes has been following through on that. It has been a real hectic effort for a couple of weeks out at the job site. So I think we have something there to offer of interest.

MR. HUGHES: This is going to cover items that really aren't addressed in the progress report, principal effort having really commenced after the progress report was issued. Basically I am going to

talk about the plan for the walkdowns, the walkdown schedule, a little orientation of the documentation, and provide you the walkdown status.

I am going to go reasonably briskly on this. If there are any questions, please ask them at the time, and we will slow down.

The walkdowns really came from a requirement in the program plan that a review of the installed, which means the as-built condition, to compare actual configuration with that used in design. As-built in this context means installed -- I'd like to emphasize that -- as opposed to certain design documents that are labeled as-built at the end of a project.

The objectives -- and I will only quote one of them here -- to visually review the installed --

MR. HUBBARD: Could you say your last thing about as-built?

MR. HUGHES: As-built is a term frequently used in architect/engineering firms that the final drawing reflecting all the tolerances, or what have you, are termed as-builts.

In the context of this review and at this stage of the effort, we are talking as-built as the installed design presently.

There is a difference, perhaps in timing where someone finally goes down and walks the system and puts the final last touch on the drawing that's all up to date, et cetera.

The objective is to visually review the installed condition of the selected design work to confirm the design intent has been adequately communicated to the constructor.

The others are quotes out the program plan in task 2 which are essentially towards the same thing.

The general scope of the walkdown was to verify that selected components have been installed where they are supposed to be; to look at routing and support locations and the general support arrangement; to look at different components; look at the sizes, types of welds, types of fasteners, how they are attached to the structure.

I would like to note, it does not include such detailed examination as material selection application, fabrication, inspection requirements, or detailed measurements. We didn't go out with a ruler to be precisely. We looked at a general relative orientation.

This is again tabulated. I'm intermixing

here the IDR procedure No. 4 and the program plan just for the background of what the commitments are.

The scope included the three systems that are referred to as the IDR scope and the common requirements aspects of high energy, moderate energy line break, fire protection, and what's referred to as II/I, the interaction of non-seismic with seismic items.

And in that context we look at the various types of components; electrical, mechanical, instrumentation, civil and structural, piping, electrical raceways, and HVAC ducts.

This is just a very simple organization to show you how at the Clinton job site we organized.

Essentially Gordon Parkinson is the one identified IDR project mananger, and I was the walkdown coordinator. We had from Illinois Power a walkdown coordinator, Doyle Wilson. S & L -- and this is not the S & L proper terminology -- Don Shopfer is their, I think it's, field project manager.

Our reviewers worked for me there. They also interacted with their team leaders -- people you have met here -- for the technical aspects of what's being reviewed.

My role is essentially to organize and coordinate the review. To assist me with that, I dealt with Doyle or with Don Shopfer in the area of facilities and information. Once we established contacts for querries, my reviewers dealt directly with IP site personnel or S & L site personnel.

Now, the schedule -- and I will go through a little in detail what I mean here -- first was the checklist preparation. And this was done by the reviewers essentially in San Francisco and mostly with the lead reviewers and approved by the team leaders. This identified the areas and the items that were to be reviewed in the walkdown.

The next was the package assembly. Now, the walkdown packages were really in the assembly identification of the drawings that would identify from a design standpoint what you wanted to check out in the the field in the various areas of the plant. It's part of planning your effort.

The training I referred to here is really the orientation of some people that we by schedule had to bring in who were not normally members of the IDR team but were experienced in the technical areas being reviewed, to orient them in the QA requirements, the

protocols of the program plan, and also to complete the training or the orientation of our own regular reviewers for what areas they are going to look at and how they are going to document and handle this walkdown and meet a relatively tight schedule.

The actual physical walkdowns at the site commenced on 10/1 and completed last Friday. Now, walkdown package completion -- I will get into that in a little bit -- is scheduled for prior to the end of the month. Those packages are in various states depending upon the nature of the particular item. A lot of -- those will be available for people to look at in San Francisco Thursday and Friday.

And when I note resolution/evaluation, again that's a process. Once you look at what you have, once you investigate what additional information you might need relative to design aspects, you come to a conclusion as to what the real animal is.

I have also allowed here the second and physical walkdowns as purely contingency should we need to go back and look at a few items that are not clear after we got done with everything.

MR. WARNICK: How many man days of effort went into that?

MR. HUGHES: I will get into that here and show you that. Let me get just a little down here, and you will see.

The walkdown depth is what I was going to cover here next. Basically, it is subjective judgment as necessary to confirm visually the design documents correctly and completely communicated the design intent.

And this goes on to just list a number of items that were looked at. You will also find this in the program plan and/or IDR procedure 4 as typicals.

And to go on in areas of some interest, piping systems for compliance with stress analysis, mechanical and electrical separation, instrument tap locations, instrument line, physical arrangements, sloping, high energy line break, and seismic II/I effects.

And these bear just a little bit of discussion in that they are very difficult problems to look at strictly from two dimensional drawings. The use of a full size three dimensional model; namely, the plant, is very beneficial in either confirming judgments you have made from drawings or in identifying areas that you didn't recognize in the drawing and you

now want to investigate.

In fact, II/I is probably more in that area, that you go and see the operations, and you say that it does or does not look like it's seismically supported. Then you go back and tab that equipment and see just what the calculation shows or the verification. So that one tends to be more driven from what you walk down physically and observe.

And fire protection again is a confirmation of the fire protection report.

Let me point out that the high energy line break and the II/I areas really were plantwide and not just in the areas of the systems within the scope.

The remainder was geared to the three systems of interest. The fire protection -- looked at the fire protection report but was able to, in areas of these systems or the electrical conduits ran, verified the various aspects that they were interested in.

Now, into manning, I will give you an idea what we had, and then I will show you the overall.

I had out there -- and this is Bechtel terminology as opposed to Sargent & Lundy for the disciplines -- two process engineers, one piping engineer, one supports engineer, one stress engineer.

In plant design, otherwise termed layout, I had two people. I had four electricals principally looking at the physical arrangements as opposed to the schemes experience. I had one controls and instrumentation man; one civil/structural full time and up to a total of five at various in for a day or two to check up and see what's going on while they were doing work in Chicago.

I had two people strictly dedicated to looking at the environmental or seismic qualification. Theirs a little different orientation in that they were trying to verify that the as-installed condition matched the analyzed condition in the various qualification reports.

In the high energy line break, two people; fire protection, two people; II/I, three people and in fact used in the latter stages one of the plant design and one of the supports people to assist.

I had one construction advisor to help us sort out internally whether things appeared to us to be a construction problem or a matter of incompleteness versus a design problem.

A typical thing between design and construction organizations is the other guy didn't do

it. So we used our own construction guy to help us sort that out and determine from our experience whether the design was in fact properly conveyed and complete or, in our judgment, it might not be.

Also management, the one there is me. We had the various team leaders at various times during the course of the two weeks.

Back to your question of how many man weeks. Here is actual man loading that I had out there for the two weeks. This is 13, 22 -- 26 is about the peak. I completed probably two-thirds of the work in the first week, including Saturday work. Sunday they had a power outage; we didn't work Sunday. And the balance in the second week.

That represents -- this is a crude measurement -- about 1,800 man hours, of which I would guess, based on being out there full time, 1,300 were spent out in the plant walking around; the rest in documenting what was seen.

So you can see there were a lot of man weeks in there, close to 1,800 for us in a normal man year.

The documentation -- and as I said, it's available in San Francisco for all the II/I where that work is being completed now in Chicago. But some

examples will be available in San Francisco, will be completed walkdown packages.

Those packages will be comprised of a cover sheet, have the applicable checklist for the walkdown, and will have the applicable drawings attached and any commentary.

In addition, wherever necessary there will be supporting review sheets. Mr. Dick showed you a review sheet. It's a diary. Its intent with regard to the walkdown is any time that people had to make a judgment "Is this adequate," that that logic be adequately conveyed in writing and appear in the review sheet so you can see the logic they went through for deciding aye or nay. And a result of the walkdown may or may not be any potential observation reports.

Just for familiarization, you may have seen this already in the program plan. This is part of IDP procedure 4. This is the walkdown cover sheet to which would be attached the checklist and the drawings.

And when I was talking about training and putting the packages together, this is where they decided what areas to walk down, what the reference drawings are.

The reviewer doing the actual walkdown then

will enter special comments and complete review sheets as appropriate. He will sign off. The team leader of the various systems will sign off to complete those packages.

And I will just flash it up because you saw it before. This is what I mean by the review sheet that will also be in support of the walkdown packages.

I can't tell you the total number, well over 50 and maybe to 200 counting all the disciplines. Each discipline had its own walkdown packages for what they were doing.

And the final status, already kind of told you I am complete for right now. We started the physical walkdowns on the first. We were substantially complete by that Saturday night and completed the following Friday. And I have allowed for follow-up up to the week of the 29th should it prove necessary.

Right now the results of the walkdowns are under evaluation. Some items very clear were either just incomplete construction or construction error. Others appear to be very clearly question for design to pursue with Sargent & Lundy, and some may, when we decide design, come back to no, it's not; that seems very clear. We may need to come back and take another

look or consult with construction further. So I allowed just essentially for that contingency.

As the bottom line, I really can't yet say too much as the results. There is one potential observation report being generated in the electrical area for electrical separation.

For the rest several areas that are under evaluation, are further review of the design with Sargent & Lundy.

Are there any questions?

MR. LEWIS: Yes, sir. Mr. Hughes, you may have mentioned it and I didn't catch it. What has been the cross talk between your vertical review teams on the IDR and your walkdown team in the formation of your area checklists and what you went out to look for?

MR. HUGHES: Essentially the horizontal review group that Bob addressed inputted to the vertical reviewers, the disciplines that were responsible for the three systems, any items that they wanted them to look at.

Those items were then tabbed up on the checklist for the walkdown that was used by my people that reviewed it. In many cases they were the same people. But that's inserted into those checklists, and

there were walk downed physically for those aspects.

So cross talk, it's a direct flow from the horizontal review group into the vertical review group.

MR. LEWIS: So the vertical review groups actually were the ones who formed your walkdown checklists then?

MR. HUGHES: Yes. They were prepared, as I said, by the individual discipline, let's say, leads who then had them approved by the various team leaders in the vertical review.

And that content comprised not only their own judgment things to check based on having spent some months reviewing this project but also input from the horizontal review group who wanted to check for this or check for that.

MR. LEWIS: Would you expect that as the vertical review matures should they find some areas that really look into, is that what that contingency walkdown --

MR. HUGHES: Contingency is something may come up in the next couple of weeks. Actually I allowed it principally for the items that were, let's say, noted that were questionable that were going to be pursued with Sargent & Lundy and for the case where the results with Sargent & Lundy is the design -- our conclusion might be that the design is adequate. Then we'd go

back out and see if we still agreed with that and might be even a construction -- I won't say construction error, because in some places the systems were not fully complete.

In general, they were, but not yet turned over any number of stages of construction that might justify what we saw, but when we looked at it, it was questionable and appeared to be perhaps a design consideration that may not have been fully conveyed.

So those would be processed back to Sargent & Lundy. And the nature of their response, it may be that we are satisfied with that, and we will conclude it's either construction and we want to go look at two or three more and see if that's also true, is it consistent.

So it's, as I said, contingency just not knowing how the final evaluations of the walkdown results will tab up.

MR. LEWIS: One final question. Did you look at the area of potential of non-safety related loads hooked up or some way connected or influencing safety related lines or systems?

MR. HUGHES: Let me get a clarification. When you talk about loads, do you mean strictly weights?

MR. LEWIS: Instrumentation, non-safety related loads from an electrical standpoint, for example.

MR. JORDAN: The answer is yes.

MR. HUGHES: Yes, we did look through that in substantial detail.

(Laughter)

MR. HUGHES: I didn't know if you wanted to talk about block walls or the II/I.

In that regard, yes, we did. We also looked at block walls or the II/I also.

Any other questions? Hope I made up some time.

MR. PARKINSON: Gosh, we are within 10 minutes of schedule. That's fantastic.

I think that pretty much concludes the detailed portion of our presentation.

Our next item on the agenda was to get into a dialogue on how and what shape the final report should take. I don't know if that's premature, Jim, as opposed to opening up for any further questioning.

MOAN: I think at this time we ought to l conversation on the final report. ink at the next progress meeting I think e fruitful and we can go into greater depth.

But obviously the NRC is aware of the content of the Byron IDR report. We have reviewed that in considerable detail.

One of the things that we would like to see in the final report is in the -- really is in Volume I where I am talking about Bechtel -- the Byron IDR report. And Volume I are the management summary.

We would like to see an assessment made with respect to the individual design disciplines. I think if you go -- and I will try to amplify that -- if you go to your first progress report, you go to Table I of that report, you see the review subjects broken down in the left-hand column with the task extending to the right.

In that we'd like to see --

MR. DICK: Just a minute, Jim.

MR. MILHOAN: Table I.

MR. DICK: Would you get me oriented?

MR. MILHOAN: Table I of the progress report.

MR. DICK: Which page?

MR. MILHOAN: Five.

MR. DICK: I have it.

MR. MILHOAN: If you see the left-hand column with respect to the system reviewed, you see the disciplines

are laid out basically in the left-hand column with the tasks extending to the right.

We would like to see, much like the IDI report, an assessment of the individual design disciplines. And that's putting the observations together and drawing conclusions with respect to the individual design disciplines, much the same way you did on the trend analysis we liked in the Byron IDI report.

We would want to continue that trend assessment, but we would want the discipline assessment in addition to the trend assessment.

With respect to -- and forgive me if I get the wrong section -- the overview section in Volume I of the Byron IDI report, it's section two where you provided an overview of each of the observations. I think you will anticipate this question.

With respect to the overview, we would like to see highlighted the basis for concluding that the observations are not generic in nature, much more detailed than what you had in the Byron IDI report but which you supplemented in a separate response to us on that. We'd like that covered in the first report.

MR. DICK: I understand.

Mr. Cahn has a question.

MR. CAHN: Back to your first point where I understand by discipline, part of my responsibility is these common requirements that fall out of the realm of one discipline.

Would you be satisfied if we looked at HELBA/MELBA, fire protection, II/I as a discipline itself, as an entity, and discussed that? Because they are multiple discipline reviews.

MR. MILHOAN: We agree there's difficulty in doing it. But in fact, we would like an assessment of the design disciplines. And it causes some trouble of separating out the individual crossover areas.

But you will have to address HELBA/MELBA separately obviously. But with respect to the assessment of the design disciplines, what does your detail vertical review and horizontal review and the observation reports tell you about the control of the design process in each of the discipline areas? That's the question we'd like answered.

MR. CAHN: Ed just mentioned, there's a difference in discipline terminology between Bechtel and S & L. Does that present a problem, or do you have something --

MR. MILHOAN: I was looking at your Table I of your progress report. You have it broken down mechanical systems, mechanical components, civil/structural, electrical instrumentation and control.

Those are the disciplines that I'd like to see covered. They are similar to what we have in the IDI report. So it's set up to make that type of an assessment.

MR. CAHN: Thank you.

MR. MILHOAN: With respect to any observations where there are design changes either made or initiated by IP as a result of the observations, we would like a separate discussion of those with respect to what would have been the situation in the plant, the plant response if those design changes had not been found and corrected?

Do you understand my question on that one?

MR. DICK: Yes.

MR. MILHOAN: We'd like that both from the component failure level and also from the system level, the system response and the component response, if that situation had been found and had not been corrected.

That, again, would go in volume -- we are

talking about the overall assessment in Volume I.

With respect to the observation reports, I think we will review those in considerable detail when we are out at San Francisco Thursday and Friday. So we may have additional comments on the observation reports, the content of the observation reports, after we look at those in a little more detail.

And I think we might have some more there, and we'd cover those at the next meeting.

Did anyone else have any general observations about the content of the report that I missed? If not, these are our general comments at this time.

MR. DICK: Thank you, Jim.

I had a -- I had several things that we were prepared to discuss with you some differences from the Byron report.

As you may have observed, we have studiously referred -- we have studiously refrained from referencing the Byron IDR in this discussion. We recognize there are significant differences.

MR. MILHOAN: Yes.

MR. DICK: But for evident reasons, it's very convenient to refer to the Byron report since it's a frame of reference, and we found that by and large it

has been well received as far as at least its understandability is concerned.

There are a few things, however, we would like to invite to your attention and which you may see -- which are a little different here, and we invite your comments.

First, we would propose a similar format to the Byron report. By that, I mean the Clinton final report would have our work and its evaluations organized in a similar manner, beginning with a rather general description and getting increasingly specific and more detailed as you progressed through the first volume and into the appendixes.

The next item here refers to a coding system that we propose to use in the appendixes where we describe the specific items that were evaluated. And that will assist in cross referencing between various parts of our report and the work that was done.

Now, I don't mean to imply here, however, that we will be able to go from every item in the review sheets into the report. But it will assist in going back the other way.

The third item deals with an attempt on our part to anticipate questions that we had experienced on

Byron that came up later on. And we would expect to describe the methodology in somewhat more detail.

MR. MILHOAN: Good.

MR. DICK: Next, as far as our conclusions are concerned, we would attempt to consolidate those rather than distribute them in the individual sections. There may be some repetition as a result of this because each section -- for example, the one dealing in general assessments, would have certain conclusions.

But in the interests of assisting the reader, we would anticipate attempting to consolidate these as much as possible.

And then of special importance, we will include a separate section describing the horizontal reviews --

MR. MILHOAN: Good.

MR. DICK: -- because, of course, we did not have that in the case of Byron, and we are aware of the interest in that.

Now, if there are any other things other than those which you have identified this afternoon to us, we would appreciate knowing at the earliest possible time because we are attempting to do something which is difficult but I think not impossible.

We are -- we will be attempting to write this report as we go along now. We are already writing, for example, the -- some of the appendixes. And as soon as possible, we will attempt to write the other material in order to avoid the usual last-minute crunch.

So obviously any last-minute changes which would be significant to the total structure or the content of the report would create some difficulties, and we would appreciate to get your input at the earliest possible time.

MR. MILHOAN: With respect to -- excuse me. With respect to that, at the next progress meeting, would it be feasible to provide for discussion at the next meeting a skeleton report with skeleton sections of how you are going to lay this out in the modified --

MR. DICK: Well, if my understanding of what you mean by a skeleton is correct, we can provide that to you before the next progress meeting.

I don't want to commit to a date at this point without speaking with my associates here. But because we feel so strongly about the need to avoid last-minute changes, we could move as quickly -- we could move more quickly than that.

MR. MILHOAN: Good. I think that would help

discussions.

MR. DICK: What I'm thinking about is an outline.

MR. MILHOAN: That's right. That would be fine. If we could --

MR. DICK: Gordon, is that reasonable?

MR. PARKINSON: The intentions are noble.

MR. CAHN: Well put, Gordon.

MR. MILHOAN: I think that would be most helpful, that we could agree on the outline of the final report.

MR. DICK: Fine. Are there any other questions or comments on what we would be talking about in the final report?

I might add one thing just by way of cleanup; and that is, a comment with regard to the satisfaction of the commitment I made at the beginning of the meeting here on a commitment list.

We have included in our package of viewgraphs a separate viewgraph on the commitment list. Now, I think it's fairly self-explanatory, and unless anyone desires that we put it on the screen and that I describe it, I would propose to simply leave it as part of a package and not take any more time, particularly since that will be available for the inspectors when they come to San Francisco; that is, the full list will

be available.

MR. MILHOAN: Good.

MR. DICK: Then we will do it that way.

Gordon, while I have the floor, can I make just a closing remark? Maybe you would rather go through any additional questions.

MR. PARKINSON: Is this a good time to open it up to the floor?

MR. MILHOAN: I think now is the appropriate time. Our guests have been very gracious to hold any comments and things, but I think now is the time to ask if the public has any comments that they'd like to offer at this time.

MR. SAMELSON: Allen Samelson from the Illinois Attorney General's Office.

We'd like to first thank the NRC, and we appreciate the opportunity to attend the meeting and comment upon it. We may submit written comments, but we'd like to get in some remarks today as time permits. I would like to just make a couple general comments, and then I will turn it over to Dick Hubbard to address some of the more technical issues that were discussed today.

First, I had a question perhaps for Jim and

the NH on the NRC inspection this week. I was wondering if you could clarify the purpose of it.

MR. MILHOAN: The purpose of the inspection -- the two-page handout will describe it, but briefly the purpose of it is to inspect the Bechtel's implementation of their program plan.

We have their program plan, and we will go in and inspect their implementation of their approved program plan. We will inspect the depth of vertical review of the IDR program.

Obviously, you know from our previous comments, we had some concern about the depth of vertical review. We think in Bechtel's response and IP's response to its owner comments, that we have a common understanding of the depth of vertical review.

Our inspection will test that out, whether we agree with the depth of vertical review or not.

We will look at Bechtel's internal procedure for their conduct of their IDR, the ones that they developed, the ones that they mentioned today. We will look at the documentation that's available at the Bechtel offices with respect to the conduct of the IDR. And we will look at the individual observation reports that have been generated.

MR. SAMELSON: Is this the only inspection that you contemplate making, or will there will be --

MR. MILHOAN: I anticipate there will be another visit in the program implementation. The date of it has not been set. A lot of it would be depend upon how much we get accomplished during the two-day visit at Bechtel. But right now I would anticipate there would be a second.

MR. SAMELSON: Is there any intention to have any NRC staff people present at any of the working meetings, the meetings that have been described in the progress report as the working meetings?

MR. MILHOAN: No, there is not any intent. We have established a protocol for the conduct of those meetings, and it would not be our intent to specifically have someone available for the -- the meetings that are conducted in accordance with the approved program plan.

MR. SAMELSON: I would appreciate it or we would appreciate it, I assume that a report will be issued after the inspection.

MR. MILHOAN: Yes, it will.

MR. SAMELSON: Similar to other -- would this be similar to our Region III --

MR. MILHOAN: It will be a report issued out of headquarters. It may not follow what you consider the normal Region III inspection format, but there will be a report issued?

MR. SAMELSON: Do you have any idea on the timing?

MR. MILHOAN: I would hope within two weeks.

MR. SAMELSON: That would be great. Given the whole time frame of the conduct of the IDR, we'd appreciate your best efforts in issuing a prompt report.

MR. MILHOAN: We will do that. I am looking over -- when I said two weeks, I am looking over here. I didn't get any grimaces.

MR. SAMELSON: Great. My next comment is in regard to the meeting which will be held after issuance of the final report.

I was just handed, I think, one of your letters from Swensier. We had some problems with the timing of that, given that I guess it's due to be issued December 15th. Two weeks from that date puts us right, I guess, between Christmas and New Year's, and which I think is going to be problematic not only for ourselves but many other people.

And two weeks does not seem to be really

sufficient time to digest the final report on this. We request that the meeting be held at least after the first week of January.

MR. MILHOAN: I would not anticipate a meeting would be held before the first week of January. As we indicated in our letter back to Illinois Power, the staff will take the time it needs to review that final report. It may take us more than two weeks to do that.

So if a meeting would be held during the first or second week of January, it would be expected that we would only have preliminary comments. I do not think it was the intent of anyone when they established that schedule to pressure us in reviewing the report because they know we will take the necessary time to do a complete review of the report.

However, I have also known from practical situation is that it's useful to have a preliminary meeting before we complete our review to ask questions as we are going through the review process. That has assisted us in doing a review of the report.

So from that standpoint, an early meeting is not -- helps us out.

MR. SAMELSON: I can see the advantage in that. From our perspective, the concern would be whether

there would be sufficient time to digest the final report as it's issued and then whether there would be a meaningful opportunity to provide comments on that.

Would you anticipate -- if a preliminary meeting is held prior to the completion of the NRC review, would you anticipate another meeting to be held to allow public comment or for the purpose of finishing up the NRC review itself?

MR. MILHOAN: I'm not sure that we had explored that situation. But let us take that comment and look at it. I think that's a valid comment that you have on it.

The other thing is I think it would be valuable for our input as to how much time, you know, the scope of the report -- how much do you think it would be necessary knowing the conduct of the IDR for you to provide comment on the report?

MR. SAMELSON: Perhaps Dick Hubbard can address that.

The only other request I would like to make is for a copy of the transcript of today's meeting.

MR. PARKINSON: Skip Fox.

MR. FOX: We will take care of it.

MR. SAMELSON: Is that a yes?

MR. FOX: Yes.

MR. MILHOAN: I think that's a yes.

MR. HUBBARD: Jim, following on from what Allen was saying, the progress reports don't really have anything in the way of underlying documents.

By that, the checklists aren't there, the commitment lists and the detailed procedures that are being used. So if one wishes to speed up the final review, then one suggestion would be that these underlying documents should be provided at an earlier time.

And that also ties into -- one of the purposes of today's meeting is to get feedback. And it's very difficult to provide feedback when the underlying documents aren't provided.

The comments I am going to give from now aren't in order of importance but more chronological of how they occurred.

MR. MILHOAN: Before you go to your next comments, I'd like an answer from Bechtel on your comments about the underlying documents.

MR. HUBBARD: Okay.

MR. DICK: Yes. As far as the underlying documents are concerned, those documents are available

at our offices in San Francisco, and they will be reviewed by the NRC inspectors.

It was not considered practical to bring those documents to this meeting for several reasons. First of all, we operate under certain time constraints. Second, many of the documents are still under review; that is, the situations relating to observations are still under review. And to make those documents available in a public meeting would be premature.

Third, of course, some of the documents are proprietary to Sargent & Lundy.

We have no reservations about making our documents available to any individuals who are authorized under our protocol to review those. But for the purpose of a presentation of this nature, it did not seem appropriate.

MR. GEIER: I think, for the record, as far as Illinois Power is concerned, I'd like to take that question under advisement. I'm not so sure we are willing to undertake that cost of making that backup documentation available to the public at this time. That's a new ballgame.

MR. HUBBARD: Can I go on, Jim?

MR. MILHOAN: Sure. Please do.

MR. HUBBARD: Another general area that in terms of the checklists and commitment lists, there have been many references to the FSAR, and I didn't hear any references to the PSAR.

And so a question I would have is: What is the role of the PSAR if any in the review?

A third area is in Mr. Geier's letter and some of the comments by Mr. Powell, it was mentioned that aspects of the HVAC system were being looked at. And we would like to know specifically what aspects of the heating, ventilating, and air conditioning systems will be looked at?

A fourth area is that there was mention made that samples were being used within some of the vertical reviews. And we think that the report should set forth the basis for the sampling size determined by Bechtel to be appropriate and then within that the reasons why particular items were selected, whether it's based on engineering judgment, statistics, or any other method that they are using.

A major comment that we would have has to do with S & L participation. When we got the first group of reports, there are a number of them where the

resolution is S & L is to do various tasks.

And we felt that it looked like S & L was doing the independent review, to be blunt; that S & L was determining safety significance; they were determining how broad the deviation or deficiency might be; they were doing a technical analysis.

I don't want to spend time to go through these, but I'd be quite willing to, if you wish. The whole S & L role in this audit is not clear to me. And it looks like it's much broader than what I had anticipated.

Also having to do with S & L's participation, that we wanted to be sure that the field design efforts were being covered; for example, small bore piping and things of that sort that are done at the site.

Moving on, we continue to have problems with the use of the word safety significant condition. We think a more appropriate threshold should be the 5555 D threshold or the part 21 threshold, if appropriate.

And we think a reduction in margin should be addressed as well as a failure to perform an intended safety function. Even within a significant safety hazard, it talks about a reduction, not just being unable to perform.

We do not agree that an observation is a very low threshold. Failure to meet a licensing commitment, that that's a low threshold? We think that, you know, is significant.

So there being a number of things below that that would need to be looked at. And in that regard, Torrey Pines, I believe, had a better system of documenting the deficiencies or deviations that were found.

What normally goes on in an inspection is that you have checklists and so forth. An inspector goes, and either it meets the criteria or it doesn't. And any time something doesn't meet the criteria, he documents that, and that becomes an inspection report, a non-conformance report or something. Then you have higher management who dispositions that.

But the basic point is that the person making the inspection does not have the authority to decide that something isn't significant. He is supposed to write down everything in the way of deviations that he finds, and management properly disposes of that.

And the methodology for the review that I hear being described does not have that two-step process. I see that the inspector from Bechtel is both

finding potential deviations and then also making a decision of whether to report them.

And the Torrey Pines review at Shorem I thought had a better protocol for that where they documented all deviations they found.

Moving on to process errors of deviations. It's not apparent to me that a process deviation would ever result in an observation by the criteria that's being used. And, you know, it obviously is the same way with accumulation of them.

In terms of calculations, there are things such as weights, orientations, and so forth that can affect calculations. And apparently orientations are things like valve orientations and so forth that are being looked at as part of walkdowns.

But I wonder if other things that are central to calculations, such as weights and things of that sort, are being verified.

Moving on to the horizontal review. It doesn't seem to me that what is going on will allow us to make a finding that the procedures applicable to the Clinton station are being followed.

We are going to have some knowledge that procedures were or were not followed at Fermi or Byron

or other things. But if the desire of a horizontal review is to say that the process being used at Clinton was in accordance with the Clinton commitments and procedures, I don't see how one reached that conclusion on the things that are being looked at because I don't see the tie-in between the horizontal and the vertical review so that we see that we can reach that conclusion.

And I would agree with a NRC comment that if you find something in the horizontal review at other plants that's applicable to Clinton, it should be looked at for Clinton; in other words, it should go beyond the three systems.

Moving on to the procedures, the State of Illinois has not received one notice of a meeting yet. And so if it is intended that we receive notices of meetings and be able to attend them, we have not received any of those from Bechtel yet. I mean, obviously we did receive notice of today's meeting, but none of the once with Sargent & Lundy.

I debated whether to comment on this. This had to do with an observation of Mr. Parkinson where he was looking at the processing of observations, and he says "Hopefully we won't see one." I hope that was

just a Freudian slip.

MR. PARKINSON: Freudian slip.

MR. HUBBARD: But we ought to just clear up the record on that. That sort of thing shouldn't be in the record in that sort of thing. I know the Bechtel people are doing this in an independent manner, and that just doesn't reflect the view that he's bringing to this.

And I think those would be the general comments that I would have at this time.

MR. MILHOAN: One of them I'd like to respond to right now, specifically with respect to the meeting notifications.

The meeting notifications, to my knowledge, are being conducted in accordance with the protocol. There have been no meetings that are subject to the protocol that have -- they are all conducted in accordance with that protocol. There have been no meetings necessary between Sargent & Lundy and Bechtel, and to my knowledge, there's been none with respect to noticing of public meetings because there's been none that have occurred subject to that protocol.

MR. HUBBARD: That's what we needed some clarification on. Because there have been a number of

meetings, and our understanding was when S & L and Bechtel got together to hold a meeting, that that was subject. And I will let you describe why a meeting isn't a meeting.

MR. MILHOAN: I think there's a difference -- I am not aware of any, quote, meetings that have been held to discuss substantive matter.

In the conduct of an IDR, obviously the independent reviewer has to talk with the reviewing organization in the conduct of that IDR the same way in the conduct of the IDI. We have to talk with the designers in doing that.

But that's only to obtain factual material and is not to discuss conclusions or to discuss anything of a valuative nature.

MR. PARKINSON: That's correct.

MR. MILHOAN: AND I'm assuming that has been the process in this IDR.

MR. PARKINSON: That's correct.

MR. SAMELSON: Maybe Mr. Parkinson or someone else can describe what these working meetings consist of.

MR. DICK: May I comment on that?

MR. PARKINSON: Go ahead.

MR. DICK: Yes. First of all, I would like to

invite your attention to the fact that we have identified meetings in our progress report to you. So there's no secret about them.

Second, I would like to point out that the meetings which we have held with Sargent & Lundy and for which there has been no public announcement made are for the purposes of gathering information.

They are not to discuss conclusions, and they are not to provide progress reports of this nature.

There is one other purpose for an occasional meeting with Sargent & Lundy, and that's on administrative matters, matters in which we discuss the requirements for or responses from them, specifically schedule type requirements, meetings and responses in a certain time frame. And we need to know when those will be forthcoming. The subject of that sort will be discussed, and those are of an administrative nature.

But if and when we have a meeting in which conclusions are discussed, we regard that as a meeting which, under the protocol, would be noticed and to which all concerned would be invited.

MR. SAMELSON: Is there any documentation or minutes made of the meetings? And if so, is that available?

MR. PARKINSON: Might I provide you with an example of a meeting? Meeting by definition, getting together of at least two people, in this case, for the optimization of performance by Sargent & Lundy. We try not to nitpick them without having something more comprehensive to discuss. And they prepare a response to a concern that we have.

I think the issue is their response does not require us to draw any conclusions or make any assessments with them at that point. We are getting a clarification or an understanding from them.

So we do have practically weekly meetings with them with our personnel in Chicago, discussing some of the things that we are looking at.

MR. SAMELSON: Is it correct then that, for instance, when information is requested in an observation report, that a response to that may be provided at one of these working meetings.

MR. PARKINSON: No, no. That response has to be provided in writing.

MR. SAMELSON: And is only provided in writing? In other words, resolution of an observation report is not discussed at all at these --

MR. PARKINSON: Not the resolution, no.

MR. SAMELSON: Or the clarification of your concern?

MR. PARKINSON: A request for information.

MR. SAMELSON: Was there any documentation of that or minutes taken as far as what information is requested and what is provided or what the agreement is or -- for instance, for each of the meetings that are listed here --

MR. PARKINSON: We have, as I tried to describe them, we have RFIs, a formal request for information form. This by its nature requests a response. It's part of our system. We get both verbal, which we document for our own coverage, as well as written responses from them.

They have their own serialized system. They call it an RR, a response to us, and they've numerated them, and they submit them to us.

And, again, these are statements of fact. They are responses to our specific questions. There is no adjudication or resolution in that.

MR. SAMELSON: I guess our concern -- and I guess maybe I am directing these comments to the NRC primarily, to the NRC staff -- is that if there is a -- you know, I would note that if there's a procedure for

requesting information, a written procedure, then it would seem that that would be the appropriate procedure to follow.

I can recognize the need for perhaps some type of informal contact to facilitate the gathering of that information. And I'm not trying to get overly formalistic.

But the concern from the State's point of view is that if weekly meetings are held for the purpose of clarifying information requests, we think that there is -- that invites the opportunity for the meetings to go beyond that, especially in light of the fact that it seems that at least the nine observations or I suppose we received about five or six observation reports seem to focus primarily on the gathering of additional information as a way for resolving the issue.

If this is the mechanism that is being used for resolving the issue, that mechanism ought to be documented, you know, and subject to review. I won't belabor the point.

MR. MILHOAN: Obviously in our inspection visit we are going to look at the protocol.

Please, would you --

MR. DICK: I think there is a misunderstanding as to the overall process of gathering information and how that ultimately gets transmitted into an OR.

And it's not intention to do anything other than to clarify that situation. And I think that's all this gentleman -- S. elson is it, sir?

MR. SAMELSON: Yes.

MR. DICK: -- I believe that's all Mr. Samelson is seeking right now.

But information in one of these reviews is gathered in a variety of ways, ranging from a rather what I will characterize as a low-level type to a rather high-level type.

High level is described by a formal request, as Mr. Parkinson just described. And it's something to which a formal response is necessarily required.

But at the beginning of a review, a broad base of information has to be acquired. You start with the FSAR and in a certain category of drawings and other design documents, and the reviewer sifts through these things in accordance with his review plans.

And as he becomes more specific, he may gather information in an increasingly refined way. I mean, he will be focusing on more and more specific

questions that he has.

Now, he gathers that information and attempts to obtain a complete understanding of the design and its adequacy by some of these -- by a variety of means. He can sit down across the table with the designer and speak to him and have the designer explain the design as he sees it. This is only asking questions now. Or he may ask for further documentation informally or he may send a request for documents as in a generic sense; in other words, please send your design criteria for pipe support design, something of this nature.

And then as he progresses through, if he has increasing concerns or needs to be more specific in his requests, he can progress to this higher level request for information.

Now, this is not sort of a one, two, three process. It's the sort of a process where the reviewer has to follow the trail as it opens up ahead of him. And accordingly, there is no one single formal meeting where everybody sits down in a room like this around a table, and they have that sort of a thing. It's a one-on-one type of an arrangement.

Again, I emphasize it's only seeking information. The reviewer is enjoined not to discuss

conclusions or criticize or say everything is satisfactory. But that's the nature of the process.

Does that help?

MR. SAMELSON: That gives me a clearer picture of what's intended, yes.

MR. SIEDOR: Greig Siedor. Just for my sake, for an understanding of what you are saying.

When you get to the level of deciding that an observation report must be made and a recommendation for resolution is prepared, which recommendation provides for a request to Sargent & Lundy for any one of a number of things, perhaps more information, perhaps documents, perhaps -- I'm not really sure what -- at that point in the process and thereafter is it conceived that there would be further meetings, face-to-face meetings, between people on your staff and Sargent & Lundy's staff to discuss those information requests?

Is it allowable for Sargent & Lundy to ask questions of Bechtel personnel by way of clarification of information sought as part of the observation report? And if so, are those requests for clarification documented in any sort of way?

MR. DICK: I'm not sure I understand the full

thrust of your question, sir, but let me try to respond in this way.

The Sargent & Lundy personnel can certainly ask of our people on a one-on-one basis to clarify what our people really mean in their request. They are sitting across the table, for example, and our reviewer requests a particular drawing. If the request is made in too general a sense, then clearly the Sargent & Lundy engineer or cognizant individual may ask our reviewer to identify more specifically what he's interested in, that sort of thing.

We have no formal way in which Sargent & Lundy writes us letters back saying words to the effect "Please be more specific."

We do, however, ask Sargent & Lundy for additional information if what is forthcoming in our view is not sufficient. We will do that. They will send us a reply to our request, and we will sometimes go back to them and say please provide additional information.

There's one point I neglected to mention in my response to Mr. Samelson here, which it may help you too. Mr. Siedor is the name?

Eventually one gets to the point where the

reviewer thinks he has all the information he can gather to arrive at an assessment of whether or not the design is adequate.

And at that point he in consultation with and with the approval of his system manager will determine it's either adequate, or he will issue a potential observation report, which is the document that goes forth to the level one committee for final assessment of whether an observation should be issued.

It's at that point where the reviewer has decided he has all the information he needs to make such a determination.

Now, does that help you?

MR. SIEDOR: Thank you.

MR. DICK: Excuse me.

MR. MILHOAN: Excuse me. Can I suggest in the interest of time -- and we are running short because people have to catch planes -- that we establish this communications with Sargent & Lundy -- between Sargent & Lundy and Bechtel as an agenda item for the next meeting in which you can present your information flow between Sargent & Lundy as you go?

Then I think it will be better on a group slide instead of answering this way, but it will be an

agenda item for the next progress meeting.

MR. DICK: Sure.

MR. MILHOAN: The gentleman in the back of the room that I asked to hold his comments previously, did you have comments that you wish to offer?

MR. PARKER: Questions actually. Mike Parker, Department of Nuclear Safety.

The Department of Nuclear Safety would also like to receive a copy of the transcript, if that could possibly be arranged.

My first question is, it's not clear to me what if any part 21 reporting responsibility Bechtel has on this.

MR. DICK: We have the part 21 reporting responsibilities any cognizant participant in a design would have. But the primary responsibility is that of the individuals who are directly involved in the plant design or the owner. It's covered by statute.

There is conceivably a situation where nobody would report, and we would feel an obligation to do it. But I would only get to that point, I think, after I had consulted our own legal staff on that matter.

We anticipate any part 21 reporting would be done by the owner or by Sargent & Lundy or whoever the

other engineer or the other designer might be.

MR. PARKER: Okay. That doesn't sound in the spirit of part 21 to me, but that's neither here nor there. It's just a question.

Secondly, I am curious about the interface between the walkdown teams and the design review teams when it comes to the area of observing differences between field installed hangers, for example, and designed specified and stress analyzed hangers. How were the stress differences reconciled in terms of communications between the walkdown team and the design review team?

That's a rather long question. Did you understand what I was asking?

MR. DICK: I think so.

Ed, would you respond, please?

MR. HUGHES: Essentially for the most part, they are the same people. In the particular case of supports, the drawings were designated by the design review team to be checked out. They were coordinated with the stress man in addition to the supports man.

The feedback for the support goes back to the supports lead team, design reviewer, if you will, who coordinates again with the stress review. They

essentially pick several stress problems --

MR. PARKER: You are backing through and checking that field installed conditions are stress reconciled with the original design intent?

MR. HUGHES: Yes.

MR. PARKER: Okay.

MR. WARNICK: You said, though, you weren't checking location specifically dimension wise.

MR. HUGHES: By measurement, that's correct.

MR. WARNICK: How far off would it have to be before you recognize that its location might represent a change to the stress analysis?

MR. HUGHES: Now, that judgment of how far it might represent a change would be really, let me say, in the knowledgeable stress engineer I have out there looking at it.

Dimensionally what I meant, I don't go measure. I don't measure a weld to see if it's 1-5/8 versus 1-3/8. I would only hazard a guess, probably within a foot or two.

The stress engineer would have to look at that configuration and decide in his opinion whether that difference in the drawing he's looking at might represent a change.

Bear in mind, we look at some of these problems in advance of doing the walkdown; whether it would make a difference, if he would note that location or his estimate of it, and that would feed back to our stress engineer in the review team and see whether or not that has been analyzed, is planned to be analyzed, is allowed for in standard deviation that much deviation, how much margin.

MR. PARKER: My question isn't even suggesting that you should have included all of this. But for my own information, most clearly you do have included as part of your analysis stress reconciliation of field installed pipe hangers.

MR. HUGHES: Yes. Understand that Sargent & Lundy has their own procedure that gets into their own detail where they get to the actual, I believe, quality control measurement and the feedback for final design or final aspect reconciliation.

So I'm dealing with what's installed today and the analysis as to the question whether the design has adequately been conveyed and changes approved and reflected back in the design considerations.

MR. CAHN: Ed, I can add to that. Based on the horizontal; that is, as-built reconciliation has come

up and has been passed from the horizontal reviewers to the vertical reviewers. So they will look at that.

On Clinton that specific item has come out in as-built reconciliation, not only in supports but in other areas as appropriate.

MR. PARKER: Last is the first question I tried to ask; and that is, safety significance. I know that this is a burdensome issue, but perhaps let me just ask my question in a simplified form.

Would you ever in your design review consider something as non-safety significant when that component had shall be designed, fabricated, installed, and tested in accordance with the the criteria of Appendix B?

MR. DICK: Yes. Certainly. Appendix B --

MR. PARKER: Certainly?

MR. DICK: Yes, you are talking about Appendix B relating to quality assurance requirements?

MR. PARKER: That's correct.

MR. DICK: Yes, yes. It's quite conceivable, if the component was not adequately designed, then we would -- and if it was a critical component, we would certainly consider it as safety significant.

MR. PARKER: That wasn't my question.

Would you ever not consider as safety significant something which was designed, constructed, installed, and tested in accordance with Appendix B?

MR. MILHOAN: Let me see if I can help.

Probably what you are saying, if you determine it's safety significant, there's probably a violation of Appendix B involved, though, in that determination from the standpoint of adequate design and --

MR. DICK: Not necessarily. The view -- the reason I answered the question as I did, Jim, was the -- all the requirements of Appendix B could conceivably be complied with, but there could be a simple design error.

MR. MILHOAN: I guess I don't want to prolong this discussion today. But obviously we are going to think about that.

MR. DICK: What I am trying to say is we are trying to -- we are looking at the adequacy of the design, the results, in effect; not whether the procedure was adequately followed.

MR. MILHOAN: You have a different view of the broadness of Appendix B than what I did.

MR. PARKER: And I think also than I do.

MR. DICK: Very well.

MR. MILHOAN: If there's no further questions, I thank you for your attendance.

I have asked the State if they would submit their comments in writing, and we will prepare a response to them and give us greater time to respond to you instead at this meeting. I think that would be most appropriate.

We thank you for your comments, and thank you for your feedback. I think it's been most helpful.

Did you have concluding remarks that you --

MR. DICK: I'd just like to summarize and indicate that we asked for feedback, and we got it. And I appreciate it.

If there's not clarification -- if what we are doing is not clear, we will attempt to clarify it at the next meeting. We will review the transcript carefully, and we will attempt to reflect this and take those areas where we may not have a meeting in mind, we will do our best to reconcile because it's in the interest, I think, of everyone to make this IDR as constructive and as credible as possible. And we are all working to that end.

I appreciate the time and attention everyone

has given.

MR. MILHOAN: Thank you very much.

MEETING CONCLUDED

STATE OF ILLINOIS)
) SS:
COUNTY OF C O O K)

NANCY L. BISTANY hereby certifies that she is the Certified Shorthand Reporter who reported in shorthand the proceedings in the above-entitled matter and that the foregoing is a true and correct transcript of said proceedings.

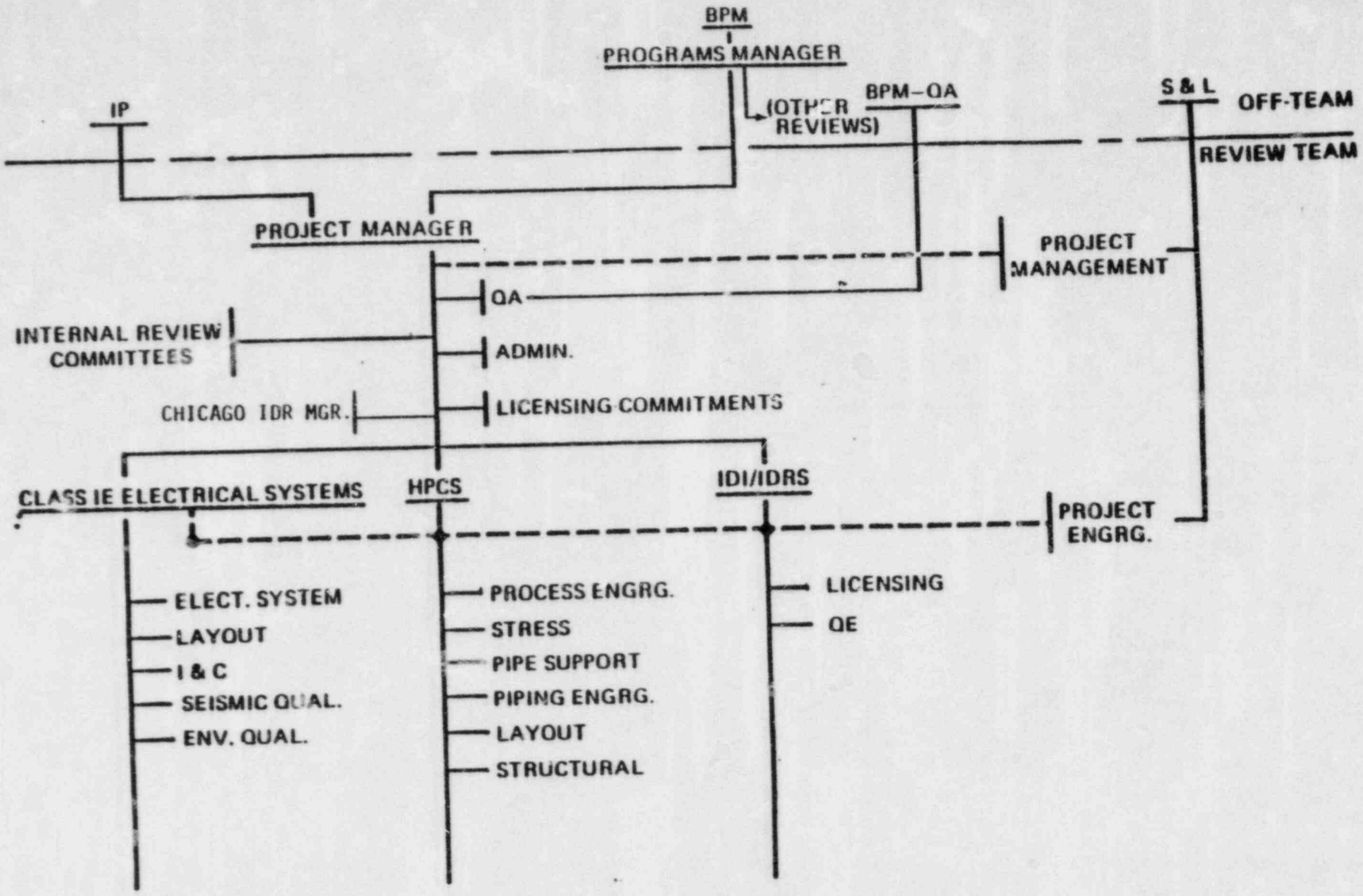
Nancy L. Bistany
Certified Shorthand Reporter

FIRST PROGRESS MEETING

OBJECTIVES

- o INTRODUCE IDR MANAGEMENT
- o PROVIDE PROGRESS REPORT
- o RESPOND TO SPECIAL SUBJECTS
- o OBTAIN FEEDBACK

CLINTON REVIEW PROJECT ORGANIZATION



——— DIRECTION

– – – – COMMUNICATION

NOTE: EACH SYSTEM GROUP PROVIDES SERVICES TO OTHERS, AS REQUIRED.

SAFETY SIGNIFICANT CONDITION

DEFINITION

A CONDITION CONFIRMED TO EXIST WHICH RESULTS IN A LOSS OF SAFETY FUNCTION TO THE EXTENT THAT THERE IS A MAJOR REDUCTION IN THE DEGREE OF PROTECTION PROVIDED TO PUBLIC HEALTH AND SAFETY

SAFETY SIGNIFICANT CONDITION

STANDARD

A DESIGN DEFICIENCY. SUCH THAT SYSTEM UNABLE TO PERFORM THE INTENDED SAFETY FUNCTION.

EXTENSION TO OTHER SYSTEMS

- REVIEW OTHER APPLICABLE AREAS IN SAMPLE SYSTEM
- REQUEST S&L TO REVIEW OTHER SYSTEMS AS APPLICABLE

BROADER IMPLICATIONS

- GENERIC PROBLEM ASSESSMENT METHODS
- ACCEPTABILITY STANDARDS
- BALANCE OF STRENGTHS AND WEAKNESSES
- USE OF INFORMAL METHODS

CRITERIA FOR FURTHER REVIEWS

- SAFETY - RELATED
- TRANSFERABLE
- SIGNIFICANT

GENERIC ISSUES APPROACH

- DEFINE THE PROBLEM
- CLASSIFY OBSERVATIONS •
- NOTE RECURRENCE •
- ESTABLISH BASIC CAUSES •
- ANALYZE RESULTS OR CONDITIONS
- DETERMINE POSSIBLE GENERIC PROBLEMS
- INVESTIGATE

• AS APPLICABLE

CLINTON IDR
COMMITMENT LIST

- o SELECTION OF COMMITMENTS TO BE REVIEWED FOR THE IDR

- o COMMITMENT LIST SEPARATED ACCORDING TO AREA REVIEWED:

	NUMBER OF COMMITMENTS
- SHUTDOWN SERVICE WATER SYSTEM	54
- HIGH PRESSURE CORE SPRAY SYSTEM	9
- CLASS IE AC-POWER SYSTEM	110
- MODERATE & HIGH ENERGY LINE BREAK ANALYSIS	21
- FIRE PROTECTION	15
- SEISMIC II/I	9
- CIVIL/STRUCTURAL	60

- o EXCLUDES ITEMS:

  - OUT OF SCOPE
  - RELATE TO UNIT 2 (NOT COMMON)
  - DESCRIPTIVE IN NATURE
  - RELATE TO OPERATION, INSPECTION, AND TESTING

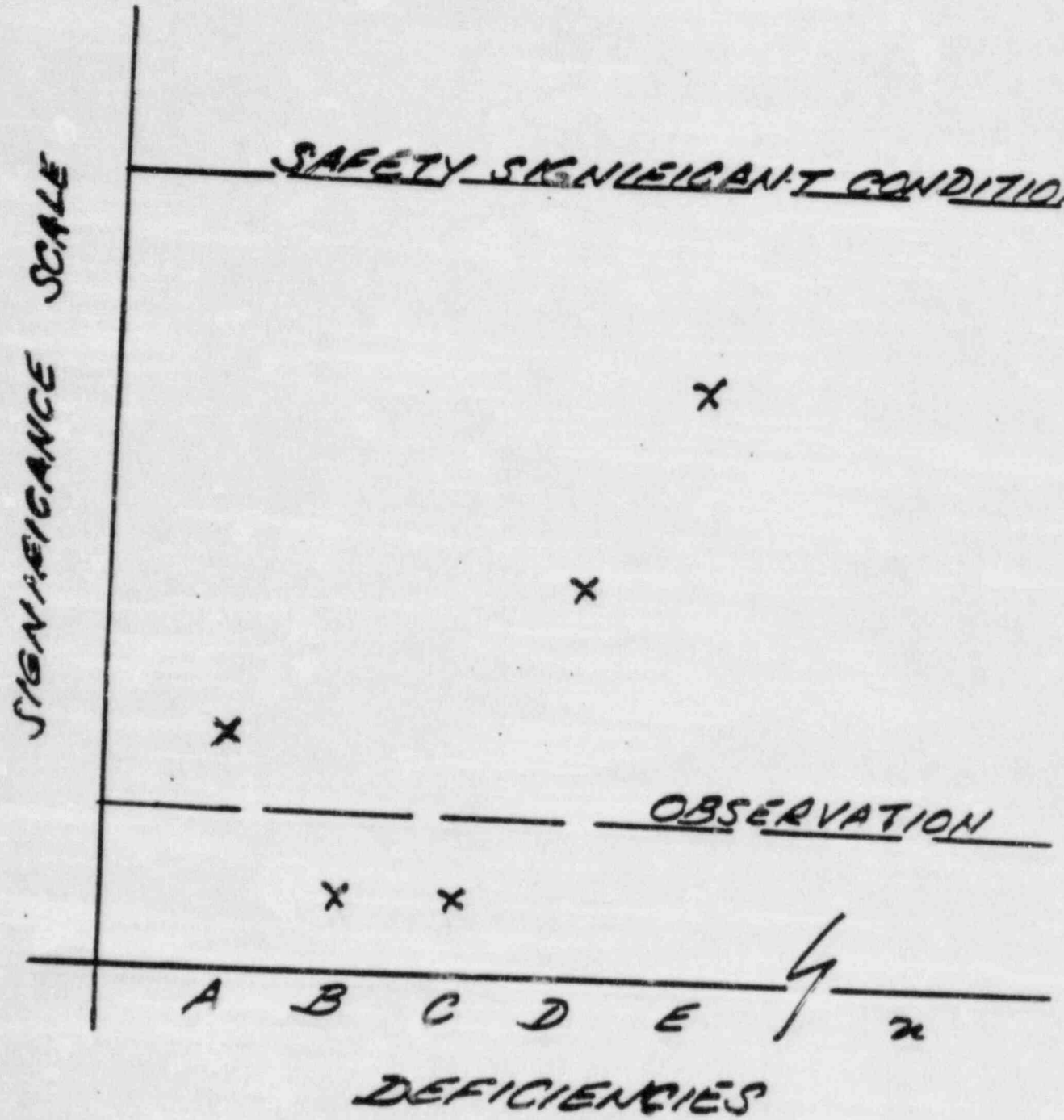
FINAL REPORT

- MODIFIED BYRON REPORT FORMAT
- NEW CODING SYSTEM
- MORE ON METHODOLOGY
- CONSOLIDATED CONCLUSIONS
- HORIZONTAL REVIEW SECTION

OBSERVATION

A CONDITION WHEREIN THE IDR, LEVEL-1 COMMITTEE BELIEVES THERE IS A FAILURE TO MEET LICENSING COMMITMENT OR OTHER SAFETY-RELATED DESIGN REQUIREMENTS.

EXAMPLE
DEFICIENCY RATINGS



KEY PROGRAM DATES

JUNE 1	INITIAL MEETING IN DECATUR
JUNE 28	MEETING WITH NRC ON PROGRAM PLAN
JULY 10	PROGRAM PLAN ISSUED FOR APPROVAL
JULY 19	REVISED PROGRAM PLAN ISSUED FOR APPROVAL
AUG. 17	AMENDMENT TO PROGRAM PLAN ISSUED FOR APPROVAL
AUG. 22	PROGRAM PLAN APPROVED BY IP
SEPT. 10	PROGRAM PLAN APPROVED BY NRC
DEC. 15	ISSUE FINAL REPORT

TASKS

1. ASSURE LICENSING COMMITMENTS MET, FOR EACH SYSTEM IN SCOPE (FSAR, ETC.)

2. REVIEW DESIGN ADEQUACY OF EACH SYSTEM IN SCOPE (INCL. STANDARD METHODS, AND JUDGEMENTS)

3. ASSESS THE DESIGN PROCESS, FOR EACH SYSTEM IN SCOPE (INCL. INTERFACES AND DOCUMENTATION)

4. DRAW BROADER CONCLUSIONS, COMMENSURATE WITH RESULTS AND SCOPE, FOR OTHER DESIGNS.

TABLE 1

REVIEW SUBJECTS vs. TASKS

REVIEW (1) SUBJECTS *	TASKS							
	Licensing Require-ments	Design Adequacy	Design Process	Design Interface w/GE & Other	Design Change Control	S&L Design Reviews	Common(2) Require-ments	As-Built Control Walkdown
SSW System								
Mech. Systems	x	x	x	x	x	x	x	x
Mech. Components	x	x	x	x	x	x	x	x
Civil - Structural	x	x	x	x	x	x	x	x
Electrical Power	x	x	x	x	x	x	x	x
Inst. & Control	x	x	x	x	x	x	x	x
Design System	x	x	-	x	x	x	x	x
Design Standards	x	x	-	-	-	-	x	x
Electrical System (1-E, ac)								
Electrical Systems	x	x	x	x	x	x	x	x
Electrical Components	x	x	x	x	x	x	x	x
Civil - Structural	x	x	x	x	x	x	x	x
Inst. & Control	x	x	x	x	x	x	x	x
Design System	x	x	-	x	x	x	x	x
Design Standards	x	x	-	-	-	-	x	x
Other Reviews								
Observations	x	x	x	x	x	x	x	-
Corrective actions	x	x	x	x	x	x	x	-
Root cause analysis	x	x	x	x	x	x	x	-

* HPCS System

Selected portions of tasks to be reviewed.

ACTIVITY

500 DOCUMENTS REVIEWED

13 MEETINGS HELD WITH S&L AND OTHERS

7 POTENTIAL OBSERVATIONS BEING PROCESSED INTERNALLY

1 OBSERVATION REPORT (OR) SUBMITTED TO S&L

PROGRAM STATUS

TASK 1: DESIGN REQUIREMENTS

- o CHECKLISTS/PROCEDURES/COMMITMENT LISTS
- o PIPING ENGINEERING
- o PLANT DESIGN LAYOUT
- o CIVIL/STRUCTURAL
- o STRESS
- o MECHANICAL
- o EQUIPMENT QUALIFICATION
- o INSTRUMENTATION & CONTROL
- o ELCTRICAL SYSTEMS
- o HELB/MELB
- o FIRE PROTECTION
- o SEISMIC II/I
- o OBSERVATIONS

PROGRAM STATUS

TASK 2: DESIGN ADEQUACY

- o PIPING ENGINEERING
- o PLANT DESIGN LAYOUT
- o CIVIL/STRUCTURAL
- o STRESS
- o MECHANICAL
- o EQUIPMENT QUALIFICATION
- o ELECTRICAL SYSTEMS
- o HELB/MELB
- o FIRE PROTECTION
- o OBSERVATIONS

PROGRAM STATUS

TASK 3: DESIGN PROCESS

- o PIPING ENGINEERING
- o PLANT DESIGN LAYOUT
- o CIVIL/STRUCTURAL
- o STRESS
- o MECHANICAL
- o EQUIPMENT QUALIFICATION
- o ELECTRICAL SYSTEMS
- o HELB/MELB
- o QUALITY ENGINEERING
- o SEISMIC II/I
- o OBSERVATIONS

PROGRAM STATUS

TASK 4: GENERAL ASSESSMENT

- o HORIZONTAL REVIEW

- o WALKDOWNS

APPENDIX A
POTENTIAL OBSERVATION REPORT SUMMARY

File #	Title	Description of Concern	Classification Valid?	Classification Significant?	Status	Description of Resolution
1	SSW Pumps	SSW pumps 1A & 1B do not satisfy design criteria to operate whenever diesel generators operate. Logic diagram for pump 1C does not implement the criteria.	Yes		S&L	
2	Time Delay Relay Coil	Time delay relay coil, shown connected across the 125 vdc control power bus, does not satisfy intent of FPR #1673.			Closed	Concern of inconsistency between design criteria, logic diagrams, and schematic diagrams incorporated into OR-1.
3	Penetration Impact Testing	Possible inconsistency between penetration fitting design spec and piping spec with regard to impact test requirements for Class 2 piping forming part of containment pressure boundary.			RFI	
4	Hydrodynamic Loads	Hydrodynamic load effects on components in D.G./Control Building may not be fully considered. Discrepancy may exist in SRV responses between Aux. Bldg. and D.G. Bldg. even though on same mat.			Level-1	
5	Valve Operability	Design documentation of Posi-Seal and Xomox valve operability might be incomplete.			Level-1	

APPENDIX A
POTENTIAL OBSERVATION REPORT SUMMARY

File #	Title	Description of Concern	Classification Valid?	Classification Significant?	Status	Description of Resolution
6	460v Motors	Calculations may be needed to ensure that 460v motors and MOV operators required to function upon actuation of safety signal will perform their safety related function			Level-1	
7	Mechanical Eqpt.	Possible discrepancy between FSAR and S&L procedures on testing mechanical equipment when resonant frequency is less than 33 Hz. for seismic loads and 60 Hz. for hydro-dynamic loads.			Level-1	

CHECKLISI
CLASS 1E AC DISTRIBUTION SYSTEM
ELECTRICAL SYSTEM

DESIGN REQUIREMENTS AND DESIGN ADEQUACY

1. REDUNDANCY
2. POWER SUPPLY
3. PROTECTIVE DEVICES
4. INDEPENDENCE
5. SURVEILLANCE
6. AUXILIARY DEVICES
7. AVAILABILITY (DG)
8. CAPACITY (DISTRIBUTION SYSTEM AND DG)
9. CAPABILITY (DG)
10. CONTROLS (DG)
11. BUS TRANSFERS
12. LOAD SHEDDING AND LOAD SEQUENCING
13. DEGRADED AND VOLTAGE CONDITIONS
14. ISOLATION DEVICES
15. BYPASSED AND INOPERABLE STATUS INDICATION
16. USE OF DG SETS FOR PEAKING
17. LOW VOLTAGE POWER SUPPLY
18. NUCLEAR SUPPLY PROTECTION SYSTEM POWER SUPPLY

DESIGN PROCESS

1. DESIGN STANDARDS, PROCEDURES, CHANGES
2. DESIGN INTERFACE
3. DESIGN CALCULATION DOCUMENTATION
4. S&L INTERNAL SYSTEM DESIGN REVIEW
5. OTHER REVIEWS

CALCULATION REVIEW

REVIEW ASSUMPTIONS

- o VALID?
- o VERIFIED? (REFERENCES)

INPUTS

- o IDENTIFY RESTRICTIVE CONDITIONS CONSISTENT WITH COMMITMENTS
- o REASONABLE? (REVIEWER'S EXPERIENCE)
- o VERIFIED? (REFERENCES)

REFERENCES

- o INTERNAL DESIGN STANDARDS
- o INDUSTRY STANDARDS (IEEE, ANSI)
- o OTHER DESIGN DOCUMENTS

CALCULATIONS

- o PROPER METHOD AND APPLICATION?
- o SPOT CHECK MATH
- o CONSIDERATION OF STEADY STATE AND TRANSIENT CONDITIONS?
- o REASONABLE CONCLUSIONS?

METHOD OF CHECKING, REVIEW OR VERIFICATION

- o CHECKER SIGNATURES?
- o INDEPENDENT REVIEW?
- o COMPUTER PROGRAM VERIFICATION?

CLASS 1E AC DISTRIBUTION SYSTEM

TYPES OF CALCULATIONS REVIEWED

1. EQUIPMENT HEAT LOSS CALCULATIONS.

2. VOLTAGE DROP AND SHORT CIRCUIT CALCULATIONS.

3. RELAY COORDINATION CALCULATIONS.

4. PERMISSIBLE CONTROL CIRCUIT LENGTHS CALCULATIONS.

5. DG STARTING KVA CALCULATIONS.

6. CIRCULATING CURRENT DURING MANUAL TRANSFER OF OFFSITE SOURCES CALCULATIONS.

7. CABLE AMPACITY CALCULATIONS.

8. BUS LOADING TABULATIONS.

TASKS

1. ASSURE LICENSING COMMITMENTS MET, FOR EACH SYSTEM IN SCOPE (FSAR, ETC.)

2. REVIEW DESIGN ADEQUACY OF EACH SYSTEM IN SCOPE (INCL. STANDARD METHODS, AND JUDGEMENTS)

3. ASSESS THE DESIGN PROCESS, FOR EACH SYSTEM IN SCOPE (INCL. INTERFACES AND DOCUMENTATION)

4. DRAW BROADER CONCLUSIONS, COMMENSURATE WITH RESULTS AND SCOPE, FOR OTHER DESIGNS.

KEY PERSONNEL EXPERIENCE SUMMARY

	YEARS EXPERIENCE		
	TOTAL	NUCLEAR	
CORPORATE MANAGEMENT			
P. KARPA	35	17	MANAGEMENT SPONSOR
J. M. AMARAL	33	14	QUALITY ASSURANCE MANAGEMENT
REVIEW TEAM STAFF			
C. W. DICK	36	19	PROGRAMS MANAGER
G. L. PARKINSON	37	22	PROJECT MANAGER
R. S. CAHN	15	15	LICENSING – COMMITMENTS
D. W. WOLFE	14	4	QUALITY ASSURANCE ENGINEER
D. B. HARDIE	31	15	QUALITY ENGINEERING
SYSTEM GROUPS			
A. W. DAVIS	31	27	I & C ENGINEERING
C. M. HAZARI	31	15	ELECTRICAL SYSTEM ENGINEER
W. R. HINTZ	28	27	STRESS ENGINEERING
C. W. JORDAN	24	20	ELECTRICAL SYSTEMS GROUP LEADER
A. S. MEYERS	40	10	PIPING ENGINEERING
M. G. MICHAIL	22	12	STRUCTURAL ENGINEERING
R. S. POWELL	36	27	HPCS SYSTEMS GROUP LEADER
B. S. SHICKER	37	26	STRUCTURAL ENGINEERING
A. VALACHOVIC, JR.	42	12	FIRE PROTECTION

KEY: TOTAL – YEARS PROFESSIONAL EXPERIENCE
NUCLEAR – YEARS NUCLEAR POWER PLANT DESIGN EXPERIENCE

CLINTON - IDR

CHECK LIST

SHUTDOWN SERVICE WATER

MECHANICAL SYSTEM

1. FSAR AND RELATED DOCUMENTS

   A) ESTABLISH AND TABULATE FSAR DESIGN COMMITMENTS
   B) REVIEW APPLICABLE SECTIONS, ENVIRONMENTAL REPORT, SER, ETC. FOR ADDITIONAL COMMITMENTS
   C) REVIEW RESPONSES TO APPLICABLE NRC QUESTIONS. TABULATE ADDITIONAL COMMITMENTS
   D) REVIEW TECHNICAL SPECIFICATIONS
   E) REVIEW APPLICABLE DOCUMENTS TO VERIFY COMMITMENT COMPLIANCE AND ACCEPTABILITY BASED ON ENGINEERING JUDGEMENT AND/OR APPLICABLE REQUIREMENTS

      1) DESIGN CRITERIA
      2) P&IDs
      3) EQUIPMENT SPECIFICATIONS
      4) GENERAL ARRANGEMENT DRAWINGS
      5) CALCULATIONS
      6) INDICES (INSTRUMENT, VALVE, ETC.), EQUIPMENT LIST, LINE LIST, ETC.

2. CALCULATIONS

   A) VERIFY DESIGN BASES
   B) VERIFY REASONABLENESS OF ASSUMPTIONS
   C) VERIFY REASONABLENESS OF CALCULATIONAL METHOD/APPROACH
   D) VERIFY CALCULATIONAL INPUTS AND SOURCES ARE PROPERLY IDENTIFIED
   E) IF A COMPUTER PROGRAM WAS USED, IS IT IDENTIFIED, VERIFIED AND APPROVED?
   F) DOES THE CALCULATION HAVE ADEQUATE RESULTS?
   G) REVIEW AGAINST COMMITMENTS AND DESIGN OUTPUT

CLINTON - IDR

CHECK LIST

SHUTDOWN SERVICE WATER

MECHANICAL SYSTEM (CONT)

3. P&ID

   A) IS SYSTEM DESIGN CONSISTENT WITH FSAR?
   B) IS EQUIPMENT IDENTIFIED AND CONSISTENT WITH EQUIPMENT LIST?
   C) ARE SAFETY/SEISMIC CLASS BREAKS PROPERLY IDENTIFIED?
   D) CHECK FOR OUTSTANDING DRAWING CHANGE NOTICES

4. SPECIFICATIONS - REVIEW FOR COMMITMENT COMPLIANCE AND GENERAL ADEQUACY

   A) DESIGN BASES IDENTIFIED AND CONSISTENT WITH COMMITMENTS?
   B) SERVICE CONDITIONS SPECIFIED AND CONSISTENT WITH COMMITMENTS?
   C) CODES AND STANDARDS SPECIFIED CONSISTENT WITH COMMITMENTS AND PRUDENT FOR THE COMPONENT?
   D) SEISMIC/ENVIRONMENTAL QUALIFICATION SPECIFIED? (CHECK WITH EQ FOR ADEQUACY)
   E) DOCUMENTATION REQUIREMENT

5. DESIGN CRITERIA (REVIEW AS A STEP IN THE DESIGN PROCESS)

   A) FUNCTIONAL REQUIREMENT FOR SYSTEM
   B) DESIGN REQUIREMENTS
   C) SYSTEM COMPONENT REQUIREMENTS
   D) OTHER REQUIREMENTS AND INTERFACES
   E) REFERENCES

6. PIPING/EQUIPMENT ARRANGEMENT DRAWINGS

   A) REVIEW FOR GENERAL UNDERSTANDING
   B) REVIEW FOR IMPLEMENTATION OF SPECIFIC P&ID REQUIREMENTS
   C) REVIEW FOR SEPARATION

CHECKLISTS (REVIEW PLANS)

- MECHANICAL
  - SYSTEM
  - LAYOUT
  - PIPING ENGINEERING
  - PIPING STRESS ANALYSIS
  - PIPE SUPPORTS
- CIVIL/STRUCTURAL
- ELECTRIC
  - SYSTEM
  - LAYOUT
- CONTROL SYSTEMS (I & C)
- EQUIPMENT QUALIFICATION
  - SEISMIC
  - ENVIRONMENTAL
  - PUMP & VALVE OPERABILITY

CALCULATIONS

MECHANICAL
- PRESSURE DROP
- SET POINT
- HEAT LOAD
- PIPE WALL THICKNESS
- PIPING STRESS ANALYSIS
- PIPE SUPPORT

CIVIL/STRUCTURAL
- PUMP HOUSE & DIESEL/CONTROL BUILDING
  - SEISMIC
  - LOAD COMBINATIONS
  - FOUNDATION & SUPERSTRUCTURE CONCRETE
  - EFFECTS OF PIPE SUPPORTS AND OTHER LOADS ON MAIN MEMBERS
  - SOIL MECHANICS
  - DUCT, TRAY & CONDUIT SUPPORTS
- PIPE STRENGTH FOR BURIED PIPE
- ULTIMATE HEAT SINK
  - QUANTITIES
  - SOIL MECHANICS
  - PERCOLATION THROUGH DAM

INSTRUMENTATION & CONTROL
- SET POINTS (CONSIDERS INSTRUMENT CHARACTERISTICS)

EQUIPMENT QUALIFICATION
- SEISMIC QUALIFICATION REPORTS
- PUMP & VALVE OPERABILITY

CLINTON IDR

HORIZONTAL REVIEW

THAT PORTION OF THE IDR WHICH USES THE ISSUES FROM

OTHER REVIEWS AS THE BASES FOR EVALUATING THE

DESIGN PROCESS ON CLINTON

OTHER REVIEWS

THOSE REVIEWS. AS SPECIFIED IN THE CLINTON PROGRAM PLAN OR DEEMED APPROPRIATE BY BECHTEL. WHICH HAVE POTENTIAL RELEVANCE TO THE CLINTON DESIGN PROCESS. THESE OTHER REVIEWS INCLUDE:

1. TELEDYNE ENGINEERING SERVICES (TES) INDEPENDENT DESIGN REVIEW (IDR) OF LA SALLE. UNIT 1.

2. CYGNA ENERGY SERVICES (CES) INDEPENDENT DESIGN VERIFICATION (IDV) OF FERMI. UNIT 2.

3. NUCLEAR REGULATORY COMMISSION (NRC) INTEGRATED DESIGN INSPECTION (IDI) OF BYRON. UNIT 1.

4. BECHTEL IDR OF BYRON UNITS 1 AND 2.

5. INSTITUTE OF NUCLEAR POWER OPERATIONS (INPO) . EVALUATION OF CLINTON NUCLEAR PLANT CONSTRUCTION PROJECT.

6. IP SPONSORED REVIEWS.

ISSUES

A CONCERN RAISED DURING THE CONDUCT OF A DESIGN REVIEW WHICH WAS DETERMINED VALID BY THE REVIEWING ORGANIZATION.

ISSUES

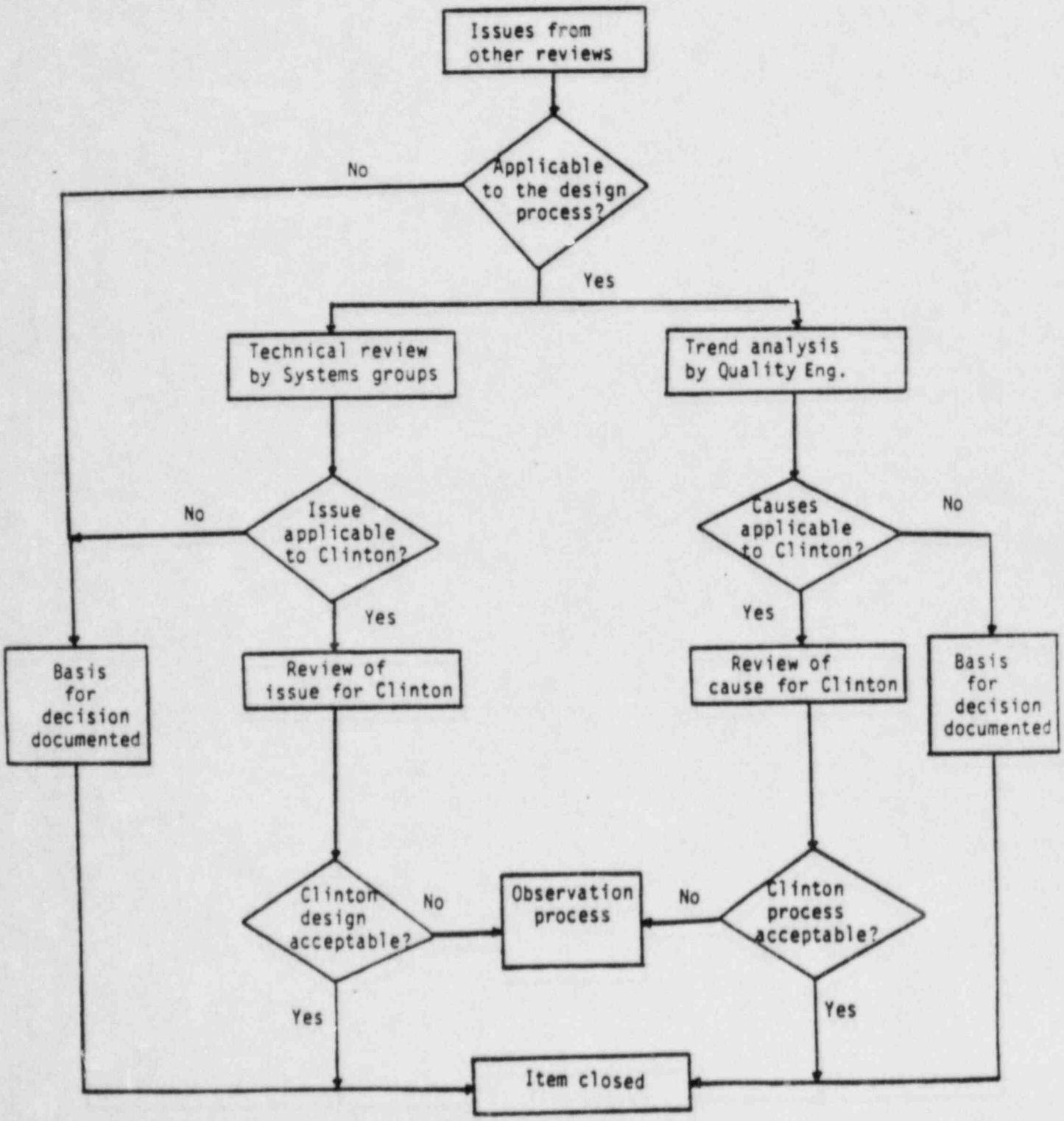
		TOTAL	POTENTIALLY APPLICABLE TO CLINTON IDR
1.	LA SALLE IDR (TES)	51	26
2.	FERMI IDV (CYGNA)	108	22
3.	BYRON IDI (NRC)	96	40
4.	BYRON IDR (BECHTEL)	49	28
5.	CLINTON EVALUATION (INPO)	36	8
6.	OTHER IP SPONSORED REVIEWS	TO BE DETERMINED	

10/12/84

CLINTON IDR

HORIZONTAL REVIEW

Basic Process



CLINTON POWER STATION
JOB 15478-003

Horizontal Review Sheet

Reviewer _____
Date _____
Review No. _____

1. Title of Document Reviewed:

2. Title of Issue:

3. Other Review Identification Numbers:

4. Description:

5. Attributed cause (from document):

6. Applicable to design process: ____ Yes ____ No

7. Applicable to Clinton ____ Yes ____ No

8. System Review Sheet Item No. _____

9. Analysis Summary:

_____
Concurrence by Horizontal System Leader

BASIS FOR HORIZONTAL REVIEW APPLICABILITY

EXCLUSION

1. OUT OF IDR SCOPE
   - CONSTRUCTION
   - QA
   - ORGANIZATION

2. NO INDICATION OF DISCREPANCY, ERROR, OR DEVIATION

3. ITEM WAS ONLY REQUEST FOR INFORMATION OR CLARIFICATION

4. DUPLICATION OF OTHER ISSUES BEING REVIEWED

5. ISOLATED OCCURRENCE; PERTAINS ONLY TO A SPECIFIC INSTANCE OR DETAIL

6. ADMINISTRATIVE CONCERNS (E.G. FILES, REFERENCES)

7. CONCERN JUDGED INVALID IN ORIGINAL DOCUMENT REVIEWED

BASIS FOR HORIZONTAL REVIEW APPLICABILITY

INCLUSION

1. RELATES TO DESIGN PROCESS AND WITHIN IDR SCOPE DIRECTLY

2. APPLICABLE TO CLINTON IDR SYSTEMS

   - STRUCTURE. SYSTEM. OR COMPONENT OR VERY SIMILAR ITEM IS PART OF OR ASSOCIATED WITH CLINTON IDR SYSTEMS

   - CONCERN ADDRESSES A DOCUMENT (I.E.. CODE. STANDARD. REGULATION) USED IN THE DESIGN PROCESS WITHIN THE CLINTON IDR SCOPE.

10/12/84
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IDR PROCEDURE #1

COMMUNICATIONS

PURPOSE:

DETAILS THE ARRANGEMENT FOR COMMUNICATIONS AND DOCUMENTS AND PROVIDES MEANS OF CONTROLLING AND RECORDING COMMUNICATIONS.

- MODES
- CONTROL
- DISTRIBUTION

L

IDR PROCEDURE #2

REVIEW PROCESS

PURPOSE:

DESCRIBES METHOD TO BE USED BY THE REVIEWER TO DOCUMENT THE PERFORMANCE OF INDIVIDUAL REVIEW ACTIVITIES AND RESULTS OBTAINED.

- o CHECKLIST
- o REVIEW SHEETS
- o OBSERVATIONS

IDR PROCEDURE #3

PROCESSING OF OBSERVATIONS

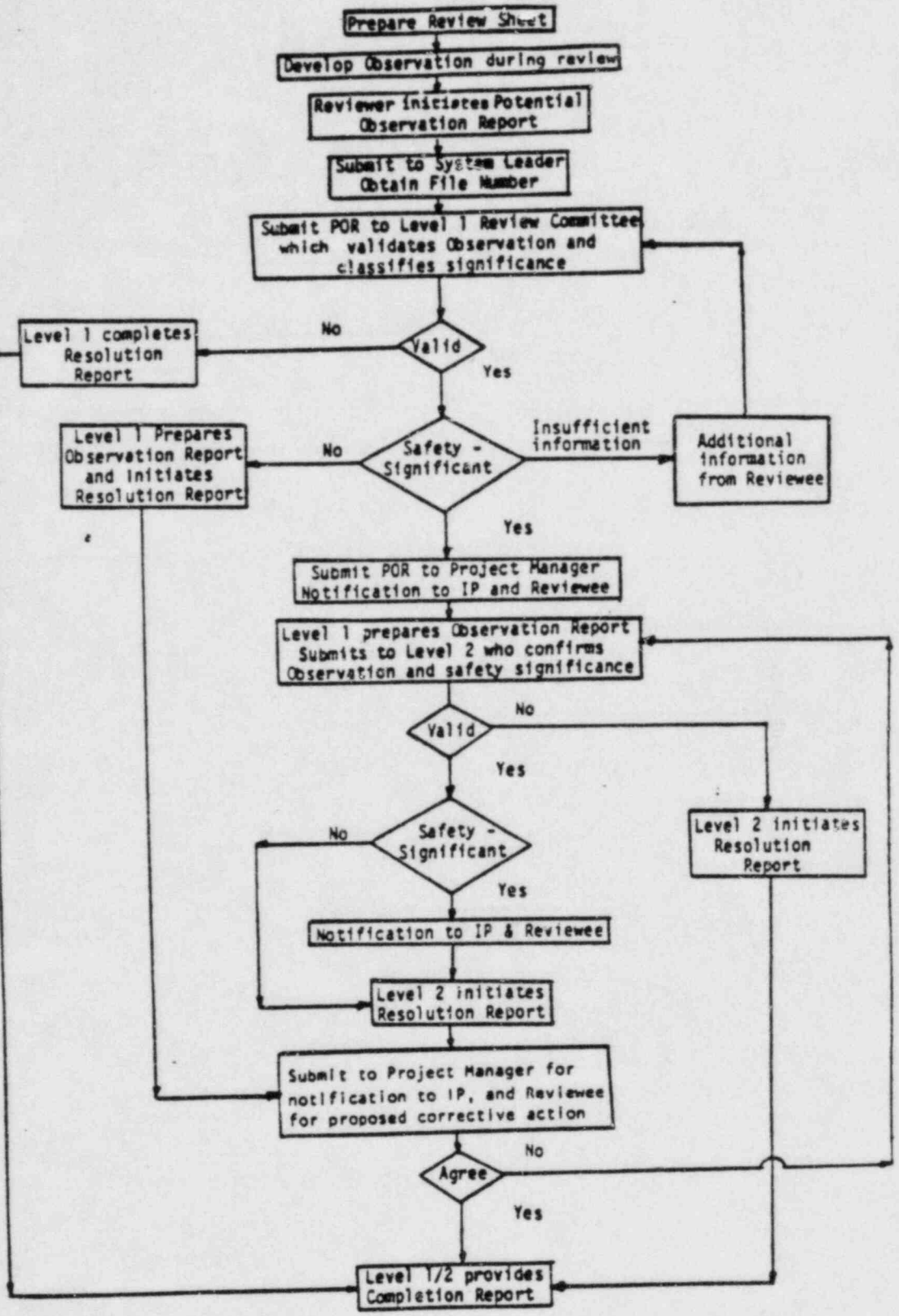
PURPOSE:

DETAILS THE PROCESSING AND DISPOSITION OF OBSERVATIONS.

- o DESIGN REVIEW
- o COMMITTEE REVIEW
- o TRANSMITTAL TO S&L AND IP
- o COMPLETION REPORT

Clinton Power Station
Job 15478-003
OBSERVATION REPORTING PROCESS*

IDR Procedure #3
Exhibit A
September 7, 1984



* At any step in the process, the Observation can be discussed with the Reviewer, System Leader, or cognizant Reviewee engineer and additional information requested to assure a thorough understanding of the concern.

CLINTON IDR

FIELD WALKDOWNS

- PROGRAM PLAN
- WALKDOWN SCHEDULE/MANPOWER
- WALKDOWN DOCUMENTATION
- WALKDOWN STATUS

REQUIREMENT

- "...A REVIEW OF THE INSTALLED (AS-BUILT) CONDITION TO COMPARE ACTUAL CONFIGURATION WITH THAT USED IN DESIGN."

  (TASK 2 - DESIGN ADEQUACY)

OBJECTIVES

- "...TO VISUALLY REVIEW THE INSTALLED CONDITION OF SELECTED DESIGN WORK TO CONFIRM THAT DESIGN INTENT HAS BEEN ADEQUATELY COMMUNICATED TO THE CONSTRUCTOR."

  - "TO DETERMINE IF THE S&L DESIGN SAMPLES ARE CONFIGURED IN THE MANNER FOR WHICH THEY WERE QUALIFIED..."

  - "...TO GAIN REASONABLE ASSURANCE THAT THE CHARACTERISTICS USED IN THE S&L DESIGN HAVE BEEN PROPERLY ESTABLISHED AND UTILIZED..."

  - "...TO APPLY THE CRITERIA TO THE CONFIGURATION AS THEY WERE INTENDED TO BE USED DURING THE LICENSING PROCESS."

SCOPE (GENERAL)

- VERIFY THAT SELECTED COMPONENTS AND PIPING HAVE BEEN INSTALLED IN PROPER RELATIVE POSITIONS.

- VERIFY ROUTING AND SUPPORT LOCATIONS AS WELL AS GENERAL SUPPORT ARRANGEMENT.

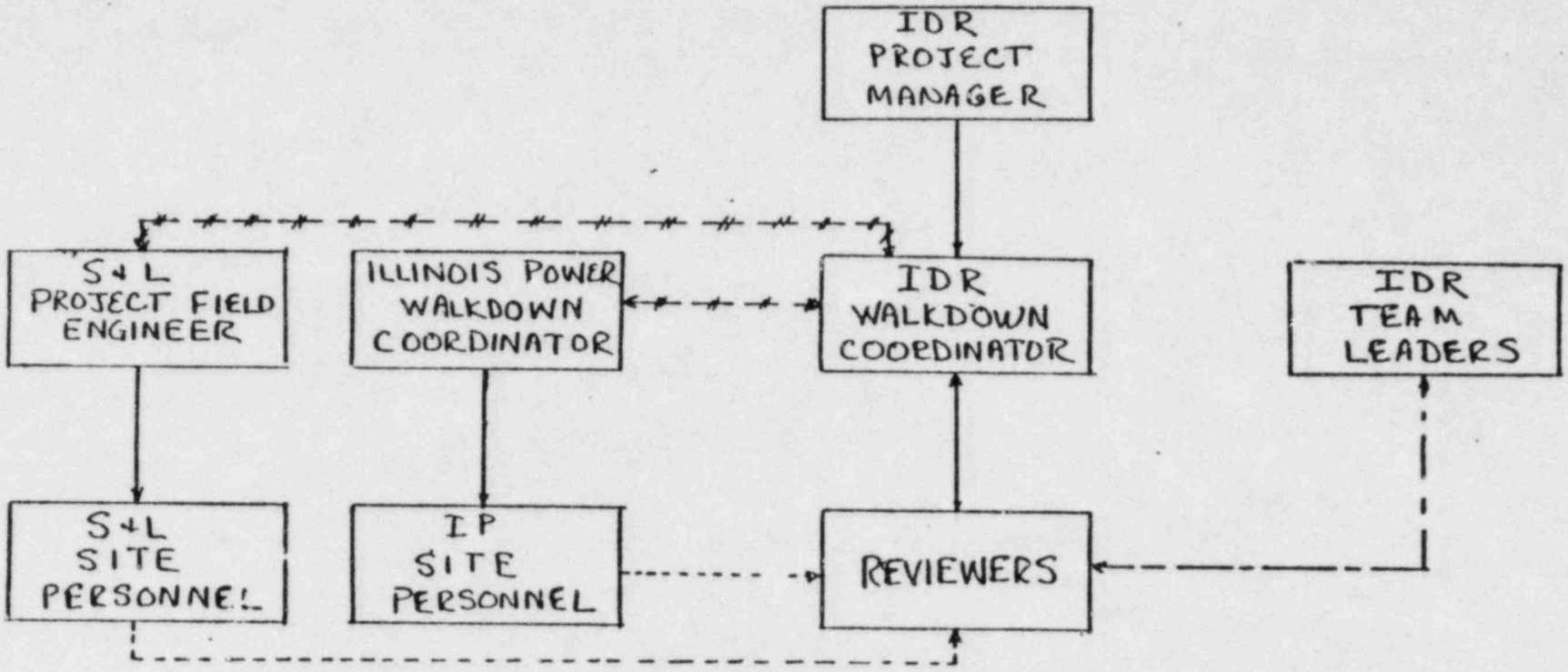
- INSPECT SELECTED COMPONENTS AND SUPPORTS TO VERIFY SUCH DETAILS AS RELATIVE SIZES, WELD TYPES, FASTENERS, AND ATTACHMENTS TO THE STRUCTURE.

- DOES NOT INCLUDE MATERIAL SELECTION/APPLICATION, FABRICATION, EXAMINATION AND INSPECTION, OR PRE-SERVICE INSPECTION REQUIREMENTS, OR TAKING OF DETAILED MEASUREMENTS.

SCOPE (CONT'D)

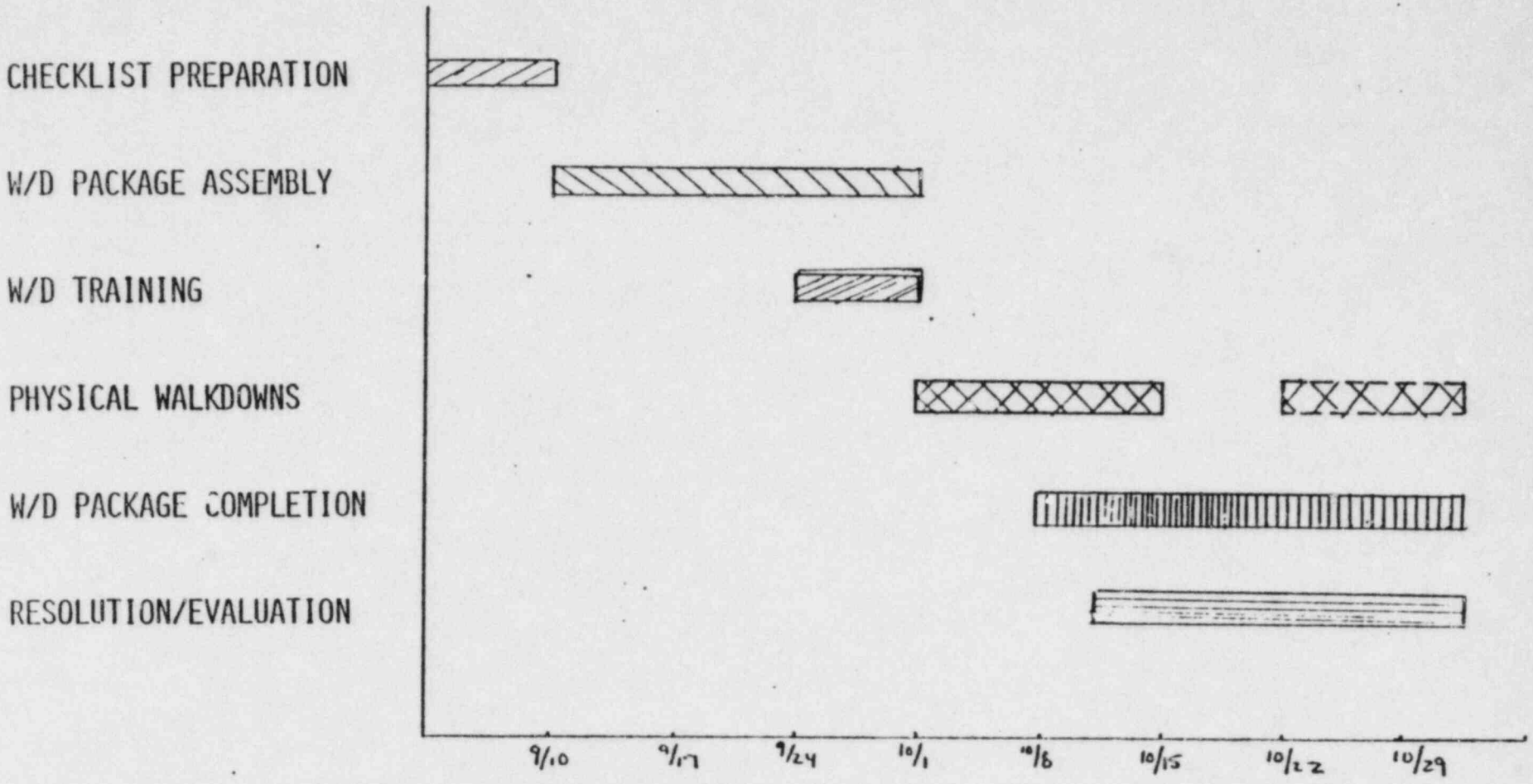
- - HPCS SYSTEM (PARTIAL) DESIGN
  - SSW SYSTEM DESIGN
  - CLASS 1E AC ELECTRICAL SYSTEM DESIGN
  - HELB/MELB PROTECTION DESIGN
  - FIRE PROTECTION DESIGN
  - II/I PROTECTION DESIGN

- - ELECTRICAL COMPONENTS
  - MECHANICAL COMPONENTS
  - INSTRUMENTATION AND CONTROL
  - CIVIL AND STRUCTURAL ASPECTS
  - PIPING AND SUPPORTS
  - ELECTRICAL RACEWAYS AND SUPPORTS
  - HVAC DUCTS AND SUPPORTS



CLINTON IDR FIELD WALKDOWN ORGANIZATION

WALKDOWN (W/D) SCHEDULE



WALKDOWN DEPTH

- AS NECESSARY TO CONFIRM VISUALLY THAT THE DESIGN DOCUMENTS CORRECTLY AND COMPLETELY COMMUNICATED DESIGN INTENT.

- PROPER LOCATION AND ORIENTATION OF COMPONENTS AND SUPPORTS.

- NAMEPLATE DATA

- MOUNTING DETAILS FOR EQUIPMENT QUALIFICATION

- WELD TYPE AND SIZE

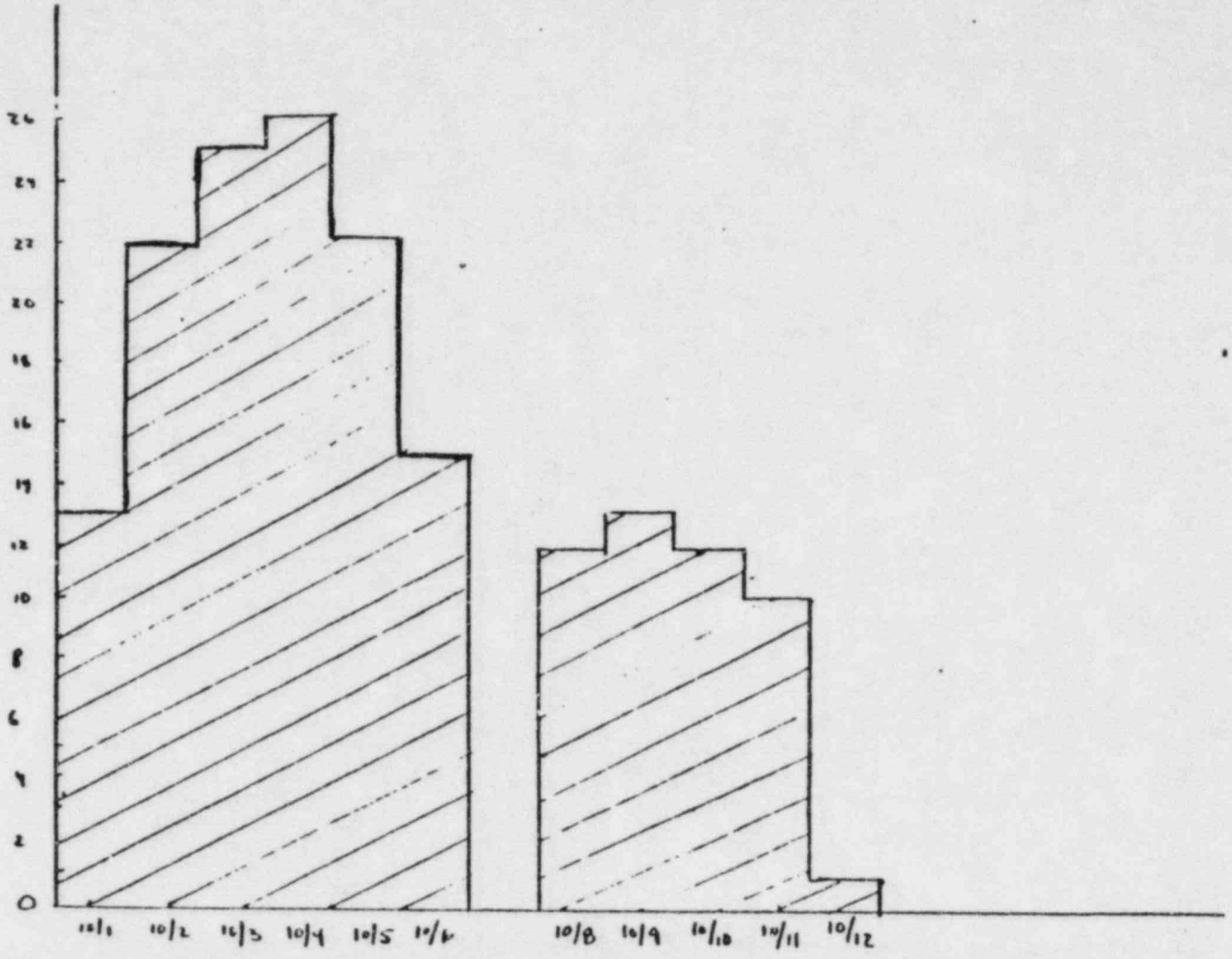
- STRUCTURAL DETAILS SUCH AS SEISMIC BRACING, ANCHOR BOLTS, WHIP RESTRAINTS, GROUTING, AND CONCRETE EXPANSION BOLTS.

WALKDOWN DEPTH (CONT'D)

- PIPING SYSTEMS FOR COMPLIANCE WITH THE STRESS ANALYSIS CALCULATIONS AND THE OVERALL INSTALLATION FOR PROPER GENERAL SUPPORT AND RESTRAINT DESIGN.
- MECHANICAL AND ELECTRICAL SYSTEMS FOR PROPER SEPARATION
- LOCATION OF INSTRUMENT TAPS
- REQUIRED SLOPE IN PROCESS AND INSTRUMENT LINES
- HELB/MELB AND SEISMIC II/I EFFECTS
- FIRE PROTECTION

WALKDOWN DISCIPLINES

MECHANICAL PROCESS	- 2	CIVIL/STRUCTURAL	- 1 (5)
PIPING ENGINEERING	- 1	ENVIRONMENTAL/SEISMIC QUALIFICATION	- 2
SUPPORTS	- 1		
STRESS	- 1	HELB/MELB	- 2
PLANT DESIGN	- 2	FIRE PROTECTION	- 2
ELECTRICAL	- 4	I&I	- 3
CONTROL AND INSTRUMENTATION	- 1	CONSTRUCTION ADVISOR	- 1
		MANAGEMENT	- 1 (5)



CLINTON IDR WALKDOWN MANNING ON SITE

WALKDOWN DOCUMENTATION

- WALKDOWN PACKAGES (COMPLETED)
  - APPLICABLE CHECKLIST
  - APPLICABLE DRAWINGS
- SUPPORTING REVIEW SHEETS (AS NECESSARY)
- POR'S (IF NECESSARY)

CLINTON POWER STATION
Job 15478-003

IDC Procedure #4
Exhibit A
September 7, 1984

IDR WALKDOWN COVER SHEET

Package No. _____
Date: _____

Identification of Installation/Area Walked Down:

Reference Drawings:

Special Comments:

Attachments: 1. Checklist
2. Drawings Listed Above

Cognizant Walkdown Reviewers: _____ Date: _____
_____ Date: _____
_____ Date: _____
_____ Date: _____
_____ Date: _____

Approved by: _____ Date: _____
System Leader

CLINTON POWER STATION
Job 15478-003

REVIEW SHEET

System _____ By _____ (Reviewer)

Subject _____ Date _____

Requirement Reference _____ Sheet _____ of _____
(e.g., FSAR para.)

Item No.	Contact S & L	Observation/Evaluation (Include documents reviewed)	Acceptability Yes / No	In Process Status	Concurrence by System Ldr., or Cont. Sheet No.

IDR Procedure #2
Exhibit B
September 7, 1994

WALKDOWN STATUS

- ACTUAL WALKDOWNS COMMENCED 10/01/84
- WALKDOWN SUBSTANTIALLY COMPLETE 10/06/84
- WALKDOWN COMPLETION 10/12/84
- CONTINGENCY FOLLOW-UP WEEK OF: 10/29/84

CLINTON IDR Program

Plan Implementation Visit

1. Purpose. The purpose of the NRC's review of the Clinton IDR program is to observe implementation of the IDR Program Plan as approved by the NRC in A. Schwencer's letter of September 10, 1984.

2. Objectives. The objectives of the NRC review are as follows:

a. Ensure that the IDR program is being conducted in accordance with the approved Program Plan (Revision 1), as modified by the Illinois Power letter of August 22, 1984.

b. Ensure that vertical reviews in progress are of the depth necessary to provide adequate assurances of design sufficiency, through review of specific check-lists prepared by the IDR team and through discussions with individual reviewers.

c. Ensure that the IDR team is aware of the level of detail which is needed to permit the NRC to adequately evaluate the conclusions provided in the final IDR report.

3. Review Material. In order to expedite the NRC's visit, it is preferred that the following documents or information be available to NRC personnel at the start of the visit:

a. The latest version of the regulatory commitments list.

b. A list of calculations selected for review in each discipline area.

c. Any check-sheets prepared for specific reviews, particularly:

HELB Analysis
SSW Walkdown
Electrical Separation
Safe Load Paths for SSW
Seismic, EEQ, and Seismic II/I Walkdown

4. Plan. The following constitutes the NRC's current intentions regarding the subject visit. The plan has been segregated into four major areas; General, Mechanical Discipline, Electrical Discipline, and Structural Discipline. Individual NRC personnel will not necessarily adhere strictly to the plan but the plan serves as a basic indication of what the NRC intends to inspect:

General

Inspection Area	Description
Project Management	General program status. Determination of generic problems. Horizontal review lessons learned.
RCI Audit Plan	Items being reviewed. Review checklists.
Quality Assurance	Audits performed. QA activity log. Deficiency follow-up

Mechanical

Inspection Area	Description
Plan Implementation	HELB analysis checksheet. SSW walkdown checksheet.
System Interfaces	Diesel generator (mechanical) Cooling water for HPCS and SSW component
Observation Report No. 1	Processing in accordance with plan.
Discussion with Reviewer	Determination of safety-significance. Use of horizontal review input. Documentation of engineering judgement. Documentation of procedural inadequacies. Control of document changes.

Electrical

Inspection Area	Description
Plan Implementation	Electrical separation checklist Class 1E distribution walkdown checklist.
System Interfaces	Diesel generator (electrical).
Observation Reports Nos. 6 & 8	Processing in accordance with plan.
Discussion with Reviewers	Determination of safety-significance. Use of horizontal review input. Documentation of engineering judgement. Documentation of procedural inadequacies. Control of document changes.

Structural

Inspection Area	Description
Plan Implementation	Safe load path for SSW checklist.
Observation Reports Nos. 5 & 7	Processing in accordance with plan.
Discussion with Reviewers	Determination of safety-significance. Use of horizontal review input. Documentation of engineering judgement. Documentation of procedural inadequacies. Control of document changes.