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NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

WATERFORD UNIT III

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400 Virginia Ave., S.W. Washington, D. C. 20024

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

WATERFORD UNIT III

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Israeli Room
International Hotel
300 Canal Street
New Orleans, Louisiana

Tuesday, November 9, 1982

The meeting of the Advisory Committee on Reactor Safeguards was convened at 8:30 a.m.

PRESENT FOR THE ACRS:

Dave Ward
Myer Bender
Chester Siess
Jeremiah Ray
Gary Quittschreiber
Zenon Zudans
Ricahrd Pearson
Ivan Catton
Don Bucci

P R O C E E D I N G S

MR. WARD: Good morning.

The meeting will now come to order. This is a meeting of the Advisory Committee on Reactor Safeguards, Sub -Committee on Waterford Unit 3.

My name is David Ward. I am Sub-Committee Chairman.

Other ACRS members present today are, on my left, Mr.Bender, Mr. Ray and Mr. Siess.

We also have ACRS Consultants Mr. Zudans, Mr. Pearson and Mr. Catton.

The purpose of the meeting is to review the licensee's effort to improve their operating training program and staffing and recruiting program.

This meeting is being conducted in accordance with provisions of the Federal Advisory Committee Act and the Governmental Sunshine Act.

Mr. Gary Quittschreiber, at the corner of the table,is a designated Federal Employee for the meeting.

Also here is Mr. Don Bucci, to my right, of the ACRS Staff.

Rules for participation in today's meeting have been announced as part of the notice of this meeting, previously published in the Federal Register on Tuesday, October 19, 1982.

A transcript of the meeting is being kept and will be made available, as stated in the Federal Register Notice.

We request that each speaker first identify himself or herself and speak with sufficient clarity and volume so that he or she can be readily heard.

We have received no written comments, no written statements from members of the public and we have received no requests for time to make statements from the members of the public.

Unless any of the other members have some comment to make at this time, we will go ahead with the agenda and call on Suzanne Black of the NRC Staff.

MS. BLACK: My name is Suzanne Black. I am the NRC Project Manager for Waterford 3.

I am here to give a short update on the status of the plant since the last dates you are estimating.

The plant is approximately ninety-five percent (95%) complete now and they are currently scheduling some fuel loads for May of '83.

The commercial operation is scheduled for January of '84.

Cold hydro testing was completed in October of this year.

Since the February ACRS meeting, we have issued

two supplements. Supplement Three was issued in April and Supplement Four was just issued last week. It probably has not reached you yet.

MR. WARD: Suzanne, do you have a copy of your slides?

MS. BLACK: Yes.

MR. WARD: I think we would like to have them.

MS. BLACK: And as of today, there are open issues remaining for review.

(Slide)

I have a slide which shows the remaining open issues.

Fire protection. That is a small area of fire protection that has to do with INPO 9-27. Procedures have not yet been finalized.

PSI/ISI review is -- I believe Staff has all the information it needs to complete that review.

Environmental Qualification the article has been scheduled for that.

Seismic Qualifiation. The article was completed in the latter part of August and Staff believes they can close it out with no problem.

Reactor Coolant Pump Shaft Break. The proposed protective system is now under Staff review.

The Core Protection calculators, the Staff has all the information it needs to complete their review there, too.

There is a type in that spot. It should be CPC, not CPS.

MR. BENDER: Are those mikes working?

MS. BLACK: Yes.

Okay.

Indemnity Requirements. That's the letter we get when they get ready for fuel loading indemnifying them.

Licensee Qualifications . Well, we're going to have a presentation on that today.

Training is probably the only thing that's left open and Licensee Qualifications, as of today.

On the TMI Issues. Upgrading procedures.They submitted updated and upgraded procedures about two weeks ago and they are under Staff review right now.

The Control Room Review. We have the Control Room Review here today, if you would like to hear more about it. That's just in the final stages and the Staff sees no problems with the Control Room Review.

The Containment System Design, Plunge Valve Operability is still an open issue in that, although, I believe that the utility is committed to -- or is considering committing to getting a mini-purge system which will make

this open item not a relevant open item any more.

And II.F.2, the utility is purchasing the CE System and that is currently under Staff review.

MR. BENDER: The operating procedures, are they in the development stage or what?

MS. BLACK: They have upgraded their procedures. We walked through with the operators at Palo Verde and the upgrade I of their procedures or a sample of their procedures after that walk-through and we approved their method of upgrading them and then they went back and upgraded every procedures, according to our comments and they have just resubmitted all procedures.

But these are not the long-term symptom oriented procedure, these are the short-term.

MR. BENDER: What's the status of the long-term procedures?

MS. BLACK: I don't think the utility has a schedule yet for developing the long-term.

MR. BENDER: What's the view about the need for them as part of the initial operation?

MS. BLACK: The Staff is not requiring them for fuel load for these plants.

MR. BENDER: Pardon.

MS. BLACK: The Staff is not requiring the symptom oriented fuel -- their symptom oriented procedures for fuel

load for the interim analysis.

MR. BENDER: How about for power operation?

MS. BLACK: I don't believe it's even tied to power operation.

MR. WARD: Maybe we can hear later from the licensee about what the actual schedule is. His EEOP's.

Yes, Chet.

MR. SIESS: Suzanne, I didn't get what the item was on containment systems.

MS. BLACK: They have very large purge valves and they haven't been able to satisfy us on the operability of them.

MR. WARD: Suzanne, the Control Room Review, is that the NUREG 0700 review?

MS. BLACK: Yes.

Although they have not submitted a detailed control room design. They are doing the interim Control Room design review.

MR. WARD: And you say that's almost finished?

MS. BLACK: Yes.

As a matter of fact, we were out at the site yesterday to look at the improvements they're making.

MR. WARD: And preliminarily, at least, things look good; is that the conclusion?

MS. BLACK: Yes.

MR. BENDER: What's the containment system design -- what's left in that to be done?

MS. BLACK: Well, if they decide not to put in the mini-purge system, they'll have to prove operability of their 40-inch valves, the closing time.

MR. BENDER: That's still under debate?

MS. BLACK: Yes.

We issued more questions to them approximately two months ago, perhaps.

MR. RAY: Is the size of these valves the peculiarity that you're concerned about?

MS. BLACK: Most utilities have put in smaller purge valves. So, to try to prove operability or closing time, I believe it's two seconds on a 40-inch valve, is very difficult.

MR. RAY: And no one else has done it?

MS. BLACK: Not that I'm aware of.

I think every utility these days has put in a mini-purge system.

MR. SIESS: Let's see. Don't you have a requirement that they can limit the operation with the large valves opened so many hours a year?

MS. BLACK: Yes.

We have discussed how many hours we'd let them

have open but they still have to prove that they can close, not only in two seconds, but close during a seismic event and that sort of --

MR. SIESS: Seismic event under LOCA?

MS. BLACK: And under LOCA,yes, and I think it's the combination of the two that's giving them problems.

MR. ZUDANS: How important is the closure time of two seconds.

MS. BLACK: It's to limit the amount of radiation that escapes after an accident, so you assume that you can tolerate a two-second closure time.

MR. ZUDANS: Can they prove that they prove that they can close them at all?

MS. BLACK: Yes, they can close them.

MR. ZUDANS: And what is the time?

MS. BLACK: Actually, they can meet the two-second closure time if there is no accident or no seismic and LOCA combination.

MR. BENDER: Are we doing a probablistic analysis of this?

MS. BLACK: No, I don't think the Staff has.

MR. BENDER: That's deterministic?

MR. SIESS: Let's see. You assume that there's an earthquake and there's a LOCA and that in less than

two seconds the Reg Guide 1.4 source term is all under containment; right?

MS. BLACK: I believe that's correct.

MR. SIESS: To get to the dose that would go out in two seconds?

MR. WARD: That does sound like a deterministic argument; doesn't it?

MR. SIESS: Yes, it does.

MS. BLACK: Any further questions?

MR. WARD: Any other questions?

(No response.)

MR. WARD: Thank you.

Our next speaker is Mr. Johnson of the NRC Staff.

We have your slides, I believe, Eric.

MR. JOHNSON: Yes,sir.

I am Eric Johnson of the Region 4 Staff of the NRC.

In October of this year, October 4th to the 8th, the Region 4 Staff assisted by some members of the Headquarters Staff, conducted a training review at the Waterford Plant.

The purpose of the review was to get an early feel for the licensee's progress, or the applicant's progress towards completing the necessary training for fuel load.

The findings from that visit I have summarized for you in those slides.

(Slide)

The first slide, we indicate our findings as to overall strengths and overall weak areas in the training program.

Under strengths, I think the foremost strenght that we identified is a very strong corporate committment to training.

They have indicated to us by the quality of people that they have brought on board to conduct their training by their intent to use the INPO Guidelines, which you'll see listed as another strength.

By the efforts that they have already put into place using a simulator and a laboratory. This laboratory refers to -- there are two laboratories.

There's an INC laboratory and an electrical laboratory that they have purchased and will be bringing on the site.

And they also have in their training department a built-in capability for review and update of the training program, to anticipate their needs.

Their training department is broken into three sections.

First is the implementation section. The

instructors that give the training courses.

There is a section dedicated for simulator training and, lastly, is the program development section.

The second strength I've listed is a centralized training department. This is a two-edged sword. You see this under the problem areas, also.

The centralized training concept has only recently been put into effect. I believe it was in September that that came into being, which has left some of the training program still operating under individual departments.

Ho , the concept that they've laid out with this three-pronged training department, one doing program development and folding back in new requirements or new needs as they are developed, with a second section which will be dedicated just to implementing the program, and, of course, the third for simulator. I believe that to be a fairly significant strength.

We've seen several other licensees in our Region who have gone to centralized training, have a good deal of success with that.

MR. WARD: So this plan was just put into operation in September, you said? Two months ago.

MR. JOHNSON: Yes.

They had been moving towards that for some time.

Back in December of 81, they brought on board Dr. Sabri as their training manager and elevated the level of management for the head of nuclear training to the same management level as the plant superintendent, which I believe underlines their corporate commitment

I think this shows us that training is going to be holding equal ground -- having equal sway along with the other committments that they'll be facing.

So, since December --

MR. WARD: To what extent are they using contractors in this training activity and how does -- whatever extent that is, how does that compare with other licensees, applicants, with whom you're familiar?

MR. JOHNSON: Well, it's difficult for me to make a judgment as to other applicants or licensees. Coming from the Regional perspective, we have looked at several other plants and this is not a typical -- right now, the authorized staffing level for the training department is fifty-four (54), which would be fifty (50) persons at the instructor level and then four supervisors , one for each of the three sub-sections of the training department and then a training manager.

Presently they have some ten (10) or so LP&L employees on the training staff. They balance our contractor employees.

During our review, we did try to assess how the students felt about the instructors, the quality of the instructors and I believe -- we came away with the impression that not only were they -- oh, some were good; some were not so good but -- not only were they on balance, the impression was the intructors -- these contractors that they were bringing in were fairly good people. Motivated and wanting to do a good job but that, on the other hand, the LP&L training staff, the LP&L employees were looking at their contractors to make that same assessment.

MR. BENDER: Excuse me.

You said this was not typical of others.

MR. JOHNSON: It's not atypical. I think it's fairly typical.

MR. BENDER: I'm sorry. I misunderstood.

MR. JOHNSON: I think it's fairly typical at this stage for a utility to be relying fairly heavily on contract support.

MR. BENDER: Is there a maintenance training program in that picture up there that I --

MR. JOHNSON:Yes, there is.

MR. BENDER: Okay.

MR. JOHNSON: There is a training program that has been developed for all phases of the plant staff, all parts of the plant staff.

MR. BENDER: What program elements remain to be developed?

MR. JOHNSON: There are some holes in some of the individual programs. The mechanical -- let me get some notes.

In the mechanical maintenance area, for example, the program is laid out but we didn't see a schedule that would allow them to meet fuel load.

INC trainir- again, we didn't see a schedule to accomplish the commitments that they had made in the FSAR.

The specific committment was that in the analog technician area and analog technicians, this would be the basic INC Tech. Their other two INC groups are computer techs and metrology -- that in the analog tech group, each technician would be qualified to what they call Level 2. Level 1 being their entry level, their base level.

Level 2, the advanced level. They would be qualified to Level 2 in at least five different systems and we didn't see a training schedule that showed us that they would be able to accomplish that.

Of course, I've got to put the disclaimer on this, that we're looking -- we were down here looking at an early stage, to try to point out some of these -- some of our, you know, potential concerns or weaknesses to allow these

weaknesses to be fixed in tim for fuel load.

MR. BENDER: I get the impression that you have a checklist of things that are to be identified in these programs? Is that a --

MR. JOHNSON: I have -- we developed some concerns and those are going to be laid out in the report that will be issued.

MR. BENDER: Concerns is different from the question I asked.

MR. JOHNSON: Yeah.

MR. BENDER: You must have come to a conclusion by now as to what ought to be in a training program and since you've pointed out some gaps, if we were to ask the Staff to give us their current list of things that ought to be in a training program, could we get it?

MR. JOHNSON: Not from me, sir.

MR. BENDER: Who could you get it from?

MR. JOHNSON: I defer to Suzanne.

MS. BLACK: I can check with our reviewer.

I imagine -- the Standard Review Plan probably gives a very general description of what we look for. The Training Reviewer, who is not here today, reviews the program on paper, as opposed to the implementation, which is what this item was.

MR. BENDER: There's nothing wrong with having

concerns, of course, but I'm concerned that there's no checklist because, if you're checking, there ought to be a basis for checking and I'm surprised that there's nothing.

MR. JOHNSON: Well, our guidance was the FSAR committments that they had made.

MR. BENDER:Well, the FSAR committment was kind of Jekyll. It just said there would be a good training program and it wasn't too explicit in what was needed and by this time I would think there ought to be something that would represent a list of things that ought to be carried on for CE-type plants.

I guess I'm a little surprised that it doesn't exist.

MR. JOHNSON: One of the elements of the training program is going to be a position task analysis and I believe this is the tack that the Staff has taken.

A single training program covering all organizations is not necessarily going to work, so you look at how you've laid out your organization and then you perform position task analysis for each of those identified positions in the organization, and from that, the training needs -- the specific training needs are developed.

MR. BENDER: That's all right but I suspect if you're going to do that, some kind of matrix kind of comparison is needed. There are certain capabilities to

be provided and you can look at the organization structure and see how they fit into it.

Without something like that, I'm not sure that you'll ever know whether you've filled all the gaps.

MS. BLACK: Eric, I understand that the Headquarters Staff is in the process of developing something like that for the inspectors.

Is that your understanding, too?

MR. JOHNSON: Yes. We were handed a copy of -- kind of an advance copy to look over for use.

Typically, the Regional people will come only after the plant goes into operation.

In this case, because of our participation in the Chapter 13 Review back in December, the concerns with the recruiting and the staffing of the plant, we felt that it would be useful to come down in an early stage because, of course, the Regional Administrator will have to make a finding of readiness to Mr. Denton, prior to the issuance of the operating license.

So we wanted to get a feel for their progress towards the goal of providing a qualified staff.

We weren't trying to match them specifically against some preconceived checklist of, you know, elements, but we wanted to get a feel for, were they meeting -- did they appear to be on the road.

The bottom line -- we do have some concerns. I'll put up the next slide --

MR. BENDER: Excuse me.

Before you do that, just a matter of curiosity about the Staff's style of operation.

You're presenting something to Mr. Denton.

What is the procedural aspects of reporting the status of training? Does it go from you to Mr. Denton or does it go through some channel of review?

MR. JOHNSON: Well, this, as I said before, I believe that this may be one of the first times that this kind of review has been performed.

The report was transmitted just yesterday from our Regional Office to Mr. Case.

MR. BENDER: I see.

MR. JOHNSON: To the Project Managers to Licensee Qualification Branch.

MR. BENDER: That's very interesting. I hadn't realized that it was a unique situation.

Thank you.

MR. RAY: Is this one of the early moves in regionalization?

MR. JOHNSON: No,sir. It wasn't designed to flex the Region's muscles. It was based on our concern that we wanted this plant to enter fuel load with a fully

qualified capable staff and they had had problems meeting the numbers, required numbers, required expertise, back in December and earlier, so we felt that getting an early look at training would be useful.

MR. RAY: That's a good idea but something went past rather fast.

You said there are ten (10) LP&L personnel in a total of how many?

MR. JOHNSON: The current -- I'll have to defer to the applicant on that.

The total manning that's authorized for the training department, the ultimate manning level is fifty-four (54).

MR. RAY: So the --

MR. JOHNSON: So the actual number on board right now, it's ten (10) LP&L and then many contractors and the specific number --

MR. RAY: And you don't know -- you don't really know, then, how heavily they're leaning on the contractors?

MR. JOHNSON: They're leaning very heavily on the contractors. In the cold license training program it's been --

MR. RAY: If the numbers are correct -- he's talking about authorized, not on board.

You don't know how many are on board,

contractors?

MR. JOHNSON: I believe there are several dozen, in addition -- fifty-nine (59), I'm told. I didn't count, because the numbers change from day to day as a task is completed.

For example, they brought in five contractors to teach the NSSS course and when that course was done, you know, those people left the site.

MR. RAY: When the applicant takes over the podium, I'd like an explanation of the details on Attachment 1 of the data we have, which indicates the Staff complement and the approved number was twelve (12).

Now, you're talking as if they have a total approaching sixty (60), and the personnel hired as of 9-15-82 is ten (10) and I presume that's the ten you're talking about?

The twelve (12) is not reconcilable with what he's saying, so when you make your presentation, I would like a reconciliation of those totals.

I'm looking at a report that was given to us.

Is the information you are presenting compatible with 9-15-82?

MR. JOHNSON: Well, we took a look at it on October 4th and, at that time, we were told that nine or ten -- I believe since then they've converted several other

-- of their contractors, to regular LP&L employees.

MR. BENDER: There's likely to be a difference between what the licensee provides in the way of a permanent cadre and what you use for initial training.

How can we determine that? Do you have something which represents the capabilities that are in the permanent training staff as opposed to those that are in this contractor organization?

MR. JOHNSON: I think we made two observations. One is that the long-range training program that they are working to put into place, will be all-encompassing, since it's going to be based upon the INPO Guidelines and the INPO Guidelines are extremely detailed, we have no concerns with the long-range program.

Our concerns right now center on their capability -- their ability to meet the immediate goals for the projected fuel load date.

Most of the program that will be put into place is going to be in place by the time of fuel load. Our concern is what about that initial staffing at the time you start dropping fuel into the reactor.

The second observation I believe, we probably feel that their projected number fifty-four (54) will turn out to be too many; could easily turn out to be too many instructors.

MR. WARD: Too many for which phase?

MR. JOHNSON: Too many for the long-term program and that's based on if they have very little attrition, then they're going to have instructors with very little to do because you'll only be doing the "requalification training". The continuing upgrading.

If they have a very high turnover rate, then fifty-four (54) will probably be very necessary.

MR. BENDER: Well, having too many doesn't bother me so much. It may bother the ratepayer but doesn't bother me.

MR. JOHNSON: I'm not going to tell the applicant he has too many.

(Laughter.)

MR. BENDER: But there is some interest in knowing the rate of build-up of the permanent staff and the rate at which the contractor organization completes its part of the program and I would expect that somebody has some kind of a manning curve that goes with that. Does that exist?

MR. WARD: Yes. Well, I think we ought to let the -- maybe hold any more detail here until the applicant has a chance to talk.

MR. JOHNSON: Yes. So many elements of the training program are very specific and needed only in a

limited time frame.

The NSSS course, where they brought in five contractors, the balance of plant systems, lectures, where they brought in people to teach those and once you dispense with those courses, you move on to the next area.

Specific results from the -- or specific concerns that we generated from our review are presented in this slide.

(Slide)

The STA training program, we found a weakness there in that the training was completed in August for their initial staffing of proposed shift technical advisors and yet they don't have an ongoing program to keep the STA's apprised of plant changes.

MR. BENDER: Is that a common requirement? Do all applicants have that, or all licensees have that capability?

MR. JOHNSON: It's not a requirement anywhere, sir. That's one of the problems. We had to point out to them that if you go and qualify or complete the initial phase of training for your staff and then freeze it at that point,while the plant design marches on, you're going to discover there's a gap of understanding when you get down the road.

I assume it's something they just hadn't

considered or hadn't put into place yet. We raised it as a concern. The applicant acknowledged that and I'm certain will be doing something about it because we're going to come back in February and look again.

MR. BENDER: Well, what do you envision? Just a periodic update of some sort, as being what's needed?

MR. JOHNSON: I won't dictate to the applicant how he's to accomplish that.

We're going to look and see how effective we think it is; whether it's routing design changes around and having people initial off on them or whether it's a once-a-week lecture to, you know, "Here's what went on during this week.". I think it can take a variety of forms.

The second item of concern was centered on the --I think the lack of getting all of the programs under the wing of the centralized training department. Some of the individual department schedules that are out there are -- don't appear to be designed to be complete by the time of fuel load.

The third area centered on the cold license --

MR. WARD: Now, is that -- you mentioned earlier it was apparently the mechanical maintenance and the INC.

MR. JOHNSON: INC.

MR. WARD: Was it something other than

that? In addition to that?

MR. JOHNSON: We had a concern in the chemistry training. They had an excellent initial training program. Again, they completed training for a class of chemists. They had high attrition, so you're bring in now inexperienced people.

The fellow who developed and taught the training program has left the site. They are now having to contract for someone to come in and resurrect that initial training program.

The Cold License Candidate Training Program was the area where we had the most significant concerns and because, of course, that is the one that are absolute requirements. Insufficient number of licensed operators at the time of fuel load means that fuel load is held up.

The first concern we felt that Cold License Candidates were not spending -- up til now were not spending enough time walking down systems in the plant and reviewing operating procedures and, again, this is based on our perception of where they should be measured against the projected fuel load date of May '83 and looking at what elements of the training program had to be completed from now, from the present until this date of fuel load.

The second item, applicant needs to develop meaningful follow-up program.

We noticed in their non-licensed operator training program, that this was a very, very successful program. The training staff went into the plant once each month; met with each non-licensed operator; took a look at his qualification card where the specific requirements were signed off; measured that against where he should be; gave him a swift kick in the pants if he wasn't where he should be and shortened the follow-up interval to two weeks.

If the candidate was still not up to standards, then the level of concern was elevated to his supervisor.

MR. BENDER: Are you saying this has stopped now?

MR. JOHNSON: No,no, no. This is what we found in the non-licensed training program.

We found no similar kind of effort -- emphasis in the licensed operator training program. They were treated as, "Here is the class. We will teach the lectures. We are authorizing four hours of overtime to go into the plant. Go out into the plant and use it."

They were at one time given call cards and given system walk down checklists. Those are not being used at present. The License Operator Candidates told us that since no one had shown interest in following up on their progress on these call cards, that most of them had just put them away and they were either at home or in a locker or lost.

Consequently, what we found, the applicant has

done some work on his own to evaluate the progress. He has brought in some contractors to give NRC-type exams and we looked at the results of these exams and talked to candidates who did very well and candidates who didn't do so well on these exams and tried to figure out what were these people doing. Was it just that these guys were smarter than these other guys?

And what we found, given the same basic background, a young fellow coming out of the Navy Nuclear Program in Case A did very well. Same fellow, young Navy -- ex-Navy Nuclear fellow didn't do so well.

So we asked the first guy what was he doing differently and we found that almost to a man, those who did very well were the ones who had spent, on their own, time in the plant tracing down systems.

Asked the other fellow, how much time he was spending in the plant tracing down systems. Got a distinct impression that it wasn't the same level and because no one was doing the follow-up, you know, giving him a prod, giving him directions where to go, we felt that that was a -- could be a contributing factor.

MR. BENDER: Is this analysis you're doing typical of what is being done in all plants now?

MR. JOHNSON: Again, I can only say that this was the first time, to my knowledge, that it's been done.

MR. BENDER: It's a good review process but I wonder whether it's --

MR. JOHNSON: Well, I think we've learned quite a bit from it and we certainly intend to do this for other plants that are coming up.

MR. RAY: The difference in the follow-up; is it the same management personnel that are initiating these pressures or are they different levels?

MR. JOHNSON: They are different instructor groups within the training department.

There are two instructors that are assigned to follow non-license operator training and there's a separate group that deal with just Cold License Candidates.

MR. WARD: Eric, are the licensed operator candidates in their permanent shift organizations or --

MR. JOHNSON: They have been broken into shift organizations. I don't believe they're in their permanent shift organizations.

MR. WARD: Would their supervisors participate in the training or in this follow-up or is this all under the training department?

MR. JOHNSON: You made a very good observation because we had the same observation.

We pointed out to the applicant that he hasn't yet identified who in his class of forty (40) Cold License

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Candidates are going to be seniors and who are going to be just reactor operators.

I can see from his perspective that you wouldn't necessarily want to make that determination too early. You'd want to see, you know, who can go -- you know, who has the potentional to be a senior and who has potential only to pass the reactor operator exam.

Consequently, he hasn't yet formally identified shift structure and shift supervisors and he has -- although during the cold hydro testing in-plant phase, folks were broken into shifts. I don't believe that was a permanent arrangement, from my discussions with the operations staff. They haven't formally identified -- they haven't put their finger on a shift supervisor and said, "These are your folks. Get them trained.", because, you know, "We're going to be looking to you to provide the leadership."

When we raised that as an observation in our next interview, I believe that was very, very favorably received by the applicant. He may be able to address that if you want to pursue that with him.

MR. WARD: Is the shift organization pointing toward, I suppose -- it is consistent with the proposed new rule. That is, there are two SRO's on each shift?

MR. JOHNSON: Two SRO's, two RO's.

MR. WARD: So what you're saying is that one of those SRO's will be the shift --

MR. JOHNSON: Shift supervisor and one would be a control room supervisor.

MR. WARD: Okay.

And the shift supervisors haven't been designated then?

MR. JOHNSON: No. They have designated, for purposes of -- I'm not sure whether it's their own internal payroll purposes or what not, they have identified what they call nuclear plant operators and nuclear operations supervisors and there are several -- there are about a dozen in that nuclear operations supervisor; to sort out who is going to be the shift supervisor out of that or whether all of those folks are even going to be recommended to take the SRO license, I don't believe that determination has been made yet.

MR. WARD: Okay.

Well, the licensees are probably sitting on their hands wanting to participate in this and we'll give them a chance to follow up on some of these a little later.

MR. JOHNSON: This last slide, Suzanne asked me to present this.

(Slide)

It gives the pictures as of October 8th when we

when we left the site, for their remaining schedule and I have just indicated for the Cold License Candidates, this is the area that we have the greatest concern in because this is the area that could stop them from loading fuel on time, if there aren't sufficient numbers there.

It's a measurable quantity that we could focus on.

At present they've completed the cold hydro static test program, as noted before. Right now, the licensed operators are going into the reactor theory classroom session, the need for which was generated out of their consultant's NRC-type examination walk-throughs.

They have identified then, fuel handling, health physics, transient analysis course in December.

There's another on-shift period in January. A very short one-week classroom session in the middle of January for procedures and technical specifications. Not to say that in the on-shift periods, they also won't be doing extensive procedure review.

Then they anticipate putting all the operators on shift in February for the hot functional testing program, which they hope to get significant benefit out as the systems are actually exercised.

Another intensive review and the NRC licensing exam, we pointed out to them that that part of the

schedule, if they're projecting a mid-May fuel loading date, won't fit with the needs of the Operator Licensing Branch, and the actual exams will have to be given -- the written exams will have to be given sometime around March. Because the walk-throughs alone will take the better part of two to three weeks.

MR. BENDER: What this is, their schedule is about two months' late, based on their predicted fuel loading?

MR. JOHNSON: The schedule that they had at that time. Now, I don't believe that they were really aware of the current scheduling mechanism that the operator licensing branch is using.

In the past, it used to be the OLB would come and give the writtens and stay and give the walk-throughs. OLB is now giving the written exams, grading them and then only giving walk-throughs to those who pass the written exams and that saves everybody a lot of effort.

That way, also, if they upgrade a fellow who failed a written exam , he can get the written one when the examiner comes to the site for the walk-throughs.

MR. ZUDANS: You mentioned about shift technical advisor,that they have gone through the training and they are not participating in the plant design changes.

What are they doing?

MR. JOHNSON: Well, they are engineers. Most of them are working on the plant staff but there's no formalized program to make sure each of them is reviewing design changes in areas where he might not necessarily be already participating.

MR. ZUDANS: I see.

So to some extent, they participate in design changes --

MR. JOHNSON: Yes.

MR. ZUDANS: -- but may not be fully covered?

MR. JOHNSON : That's right.

That's the extent of that concern.

MR. CATTON: The STA's, who are they and what kind of background do they have?

MR. JOHNSON: I'll let Bob Benedict answer that.

We interviewed a number of the STA's when we were here in December. Some of them had been former STA's at other plants. The balance are, I believe, and I'll let Bob, maybe, or the applicant address that.

MR. CATTON: That will be fine.

MR. JOHNSON: Are engineers. Graduate engineers.

MR. CATTON: Fresh out of school?

MR. JOHNSON: Not all of them but it's hard to find -- it's hard to find an STA with twenty years experience.

MR. WARD: Okay. Will it be okay if we wait until the applicant gets up --

MR. CATTON: I just wanted to sort of forewarn him.

MR. WARD: Okay.

Eric, do you have anything else?

MR. JOHNSON: That's -- no, that's the substance of my presentation.

MR. WARD: Any other questions for Mr. Johnson?

MR. BENDER: I think this review process you're using is a very good one. It may be showing up some things.

MR. JOHNSON: As I say, we've learned quite a bit. We fully intend, based on the concerns that we generated, to return in February and why we've picked February is, that that will be about the time when the applicant has a second formal review of the qualifications progress of his candidates by an outside consultant.

We will come back down at that time, look it over and see if there is Delta and we hope we will see one.

MR. PEARSON: One more question.

When you talk about the contractors involved in this training, I hope somebody will ultimately elaborate on specifically who these people are and, you know, where they're from and where they're doing the work and what are

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their qualifications, too.

Either you or somebody else.

MR. JOHNSON: I can -- the contractors come from all over. They are independent contractors -- in some cases, independent contractors. I think that's kind of a typical -- it's becoming a very typical practice now in the nuclear industry. A guy works for -- worked for a utility. He gains a certain experience and expertise. He leaves. He might work for a consultant for a while. Go out and body shop and discovers that, why should he pay -- you know, why shouldn't he get the whole thing, the whole piece of the pie instead of just a thin slice and, so, he goes out and independently contracts.

Certainly the major service organizations are providing -- they are using combustion engineering -- Westinghouse has provided, G.E. has provided, Quadrex has provided --

MR. WARD: You're saying all these -- you're giving the impression that all of these have provided services here at Waterford. Is that what you're saying?

MR. JOHNSON: Right. Indeed.

I mean, they have gone and looked at their needs and then gone out and tried to match those needs to the best that's available.

We found, for example, in one case, there had

been an allegation that had been made outside of this Region that combustion engineering was not providing qualified people to the -- to Waterford and several other nuclear power plants.

I had an opportunity to review in detail this allegation while I was down here and determined that it was, indeed, not founded.

The combustion engineering people very specifically outlined the qualifications and capabilities of the contractors they had sent down, the folks they had sent down here to the site.

The site people were similarly aware of exactly what they could do and couldn't do and used them only in that regard. In other words, didn't try to use a guy who wasn't familiar with overall plant operations to teach, you know, integrated plant response but just let him teach the individual system that he was an expert on and then used other qualified people to teach integrated plant response.

So, in that regard, I believe we came away with the impression that there has been a sensitivity to the qualifications of the contractors that are brought in.

MR. CATTON: How do you assure yourself that the day they start operating, they don't just get rid of all those contractors?

MR. JOHNSON: Well, I'm sure that they would

like to be in a position where they could get rid of all the contractors.

I'm not certain that I can really give an adequate answer to that. It may not be necessary to have all of these folks on board.

MR. CATTON: Is the anticipated training program described in some concrete way that sort of fits into their text facts: of something that you assure yourself is maintained in the future?

MR. JOHNSON: Well, there are industry standards that they are committed. There are committments -- some very specific committments in the FSAR that hold them to some fairly strict guidelines.

But they're not going to fold their tent and, you know, pack all these folks off until they're -- I've gotten that impression.

The number one item on the first slide said: Strong Corporate Committment to Training. I believe that that's the case.

MR. WARD: Thank you, Mr. Johnson.

Our next speaker will be Mr. Benedict.

Bob, you're going to give us a comparison of their operator training program with that in other utilities?

MR. BENEDICT: No, sir.

MR. WARD: What are you going to tell us

about?

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MR. BENEDICT: I was going to tell you about Item -- I guess, it's D.

Let me -- I'm Robert Benedict, Licensee Qualifications Branch, NRR.

We do not make a comparison, a detailed comparison of licensed operator training programs. As Eric had already mentioned that item, I thought perhaps we had gone past that point.

Our review Operator Licensing Branch and LQB, our review is primarily -- is definitely directed to what -- to meeting the criteria, the acceptance criteria, given in the Standard Review Plan.

So that where there may be quite a wide variety of methods of teaching or of varicus training programs among utilities, their requirement -- any given applicants' requirement is to meet those acceptance criteria of the Standard Review Plan, and we judge what is stated in the FSAR, for example, against that SRP.

MR. RAY: Bob, you're speaking from the perspective of the Central Staff, not the Regional Staff?

MR. BENEDICT: That is correct.

See, when we write an SER, we are constrained effectively to the Standard REview Plan.

MR. BENDER: I can understand a position which

says, "We don't want to have any explicit set of training practices that have to be followed regardless of who the licensee is.", but it does seem to me that there should be some general assessment of what the good versus less good utilities do. Just so there's some basis for comparison.

Is anything going on in the Staff that would eventually get to a point where you could make a judgment like that?

MR. BENEDICT: Yes, sir, I believe so.

As a matter of fact, during the October visit down here, we brought down from Licensee Qualifications Branch two other people who have experience in training. One of whom has had extensive experience in developing training programs and developing lesson plans and so forth. And they participated, together with the Regional people in looking at some of the details.

Those are details that are not covered by our Standard Review Plan but are factors involved in our LQB getting involved in looking at the details of these programs and seeing -- comparing them with training programs and methods that have been used elsewhere in the past.

Right now we have not gotten that to the point of being an established procedure within our branch for checking Waterford against Grand Gulf or someone else.

MR. BENDER: You used to use warm feelings.

What's the temperature in this case?

(Laughter.)

MR. BENEDICT: I think I can reiterate Eric's statement that these people have come a long way since last year, and obviously have -- they're coming from way back and, therefore, you might say they don't look quite as good at this stage of the game, but they're getting there.

They're going and to be able to say that it's a go, no-go case at this stage, at this time, that's practically an impossibility.

MR. BENDER: Well, I'm conscious of some situations -- not applying to training but to other things in the review processes, in which the Staff has suggested, well, things are not as good as we would like but they are getting better and the better never seems to get there and I know of at least one case where better seems to have gotten worse and I hope that's not the case in this training program.

Can I be assure that that is the case? That they are progressing and that you see a positive trend and if the trend continues, you'll be comfortable with the situation?

MR. BENEDICT: I think that -- I defer that judgement to Eric, who has provided the in-depth look at what they are doing and how they have progressed.

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Again, as I say, our efforts in Bethesda are primarily directed at the written word, at this stage of the game. I fully expect that some time in the future, we will digging in more deeply, just as the Region has, and as Eric has said, for the first time at this plant.

Now, we are trying to develop that capability to judge the mechanics of a training program.

MR. WARD: Maybe we ought to let Mr. Johnson answer that question. I'd be interested in hearing that. I guess it wasn't put to him quite that way.

Would you answer Mr. Bender's question?

(No response.)

MR. WARD: Do you want it restated?

MR. JOHNSON: If you would, please.

MR. BENDER: All right. I'll try.

Can you make a judgment at this stage that while the program may not be as good as you'd like to have it, that the trend is good and if the trend continues in the way in which it's going, it should come up to your intended specifications in a reasonable time?

MR. JOHNSON: Yes,sir, I believe that we in the Region feel that way. I made an observation -- a light observation that it's really not a question of too little, too late. There are sufficient resources applied.

Our concern is the too late part and, as long

as -- I told the applicant that he is not burying his head in the sand on this. I see that he has full-square addressed the problem. I want him to understand that we in the Region also know that he is on a tight schedule to meet the projected fuel load date and that was the reason why we will be coming back down here in February, to help him out again.

MR. BENDER: I wish I knew this kind of review was being carried on at other plants. I think we'd all be more comfortable with the situation. There's nothing magic about a two month delay. I suspect there are a lot of reasons why a two month delay may show up anyhow but regardless, it's good to know that's about the mismatch at this stage.

MR. WARD: Yes, Chet.

MR. SIESS: The concern here, of course, is the Cold License Program that this plant hasn't started yet and we're trying to keep them on schedule and I guess this may be addressed more to Bob than it is to the Region, Dr. Catton raised a question that he said would be addressed later about the continuing program after they get started up.

Is the Staff looking at the training programs for the 70-odd operating reactors with the same degree of intensity that they're looking at the training programs of

the new plants that are having trouble getting people?

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And one thing that's in the back of my mind is, that I suspect some of the people they are getting are coming from those other 70 plants, and are having to be replaced there.

MR. BENEDICT: I think your last remark is probably quite true, a great deal of thievery going on.

We, in Licensing Qualifications, have not gone back to operating plants. I have heard of nothing in the wind to do so, to review their continuing programs.

MR. SIESS: You see, those plants started up probably with people trained by a program only a fraction as effective as the one we're talking about here and some of them have been operating for fifteen (15) years and I guess I have to be as much or more concerned about a plant that's operating as about one that isn't operating --

MR. BENEDICT: They have the advantage of fifteen(15) years of experience, on the job.

MR. SIESS: I'm not sure, you know -- it might have had one year experience fifteen times and it might not have all been good experience, either.

I mean, if they didn't have good training, they could still be operating with poor operating practices that just haven't caused any problem. Maybe never will cause a problem. We don't know but we know it did in one case.

But the emphasis now is on the NTOL plans.

MR. BENEDICT: That's correct.

MR. SIESS: Does the Staff have any idea at some time of going back and looking at the operating plants?

You know, if you say their experience is good, why isn't somebody looking at what their training program was as a guide to what training programs ought to be.

Instead, it seems that we've started out de novo on training programs as if there had never been one before.

MR. BENEDICT: I have seen nothing nor heard nothing in the wind of going back, unless it were to be included in what -- the SEP? Systematic Evaluation Program. And I don't believe --

MR. SIESS: SEP doesn't look at that. I can assure you.

MR. BENEDICT: It has not been looked at. No. That is correct.

MR. SIESS: Well, you know, we were talking about comparing this program with somebody else's. Now, there were plants that have been operating for five years or ten years, more or less successfully. You can say TMI wasn't so successful but somebody else was. Con-Yankee, for example, it went thirteen (13) months without a shutdown.

Was their program as good as this one? And if

it wasn't, do we know how good a program has to be?

MR. BENEDICT: I have no answer. Your comment is, I think, well taken, and I'll bring it home.

MR. WARD: Okay. Let's see, Bob.

I guess I'm a little confused as to where we are in the agenda and you were going to talk --

MR. BENEDICT: Well, I'm after the -- what? C?

MR. BENDER: I think you're on for C or whatever it is; aren't you?

MR. JOHNSON: Yes,sir.

This is Eric Johnson.

I believe that there was an item for Enforement History and I believe what you were looking for there was if there was an enforcement action in the area of training, plant staffing, qualifications. There is none. So I suppose that should suffice.

I do want to make one comment on -- the two-month time frame that we're talking about, that was something that I don't believe the applicant was aware of. It doesn't necessarily mean that his program could not be compressed if he works -- if he decides to work Saturdays or something.

He just wasn't aware of the kind of time frame that OLB operated under.

Typically, you don't start talking to OLB for

scheduling exams until you're, oh, about five or six months away from actually giving the exam and we're just about at that point, so I think it was timely. The applicant learned something about communicating with the Staff and finding out what kind of time frame they're working on.

MR. WARD: Welcome back, again.

MR. BENEDICT: I didn't even have a chance to catch my breath.

Here is a chart showing the progress of the staffing for the nuclear operations department of LP&L.

MR. WARD: Do you have a handout on this, Bob?

MR. BENEDICT: Yes.

MR. WARD: Gary, do we have a handout on this?

MR. ZUDANS: It's already been --

MR. BENEDICT: Thank you.

The applicant has been providing us with monthly reports on the progess in staffing, oh, for the past year and a half or so.

Late last year we had reported in the supplement to the SER the staffing levels at that time and we would like to bring you up to date as we have it on their October 15th, 1982 report.

Here we have a chart that shows in the two left hand number columns the approved staffing levels, the number

of slots in the various groups.

The left hand one labeled 12-81 were the authorized slots at the end of last year and as this past year has gone by and their various reports, their monthly reports, we see that they have changed to some degree, such that in October, they have increased the total staff from 407, at the bottom of the page, to 483.

Most of these, as you can see, came by the increase in the training department staff, the allocated slots there, with some increases also in the QA staff and the start-up organization had significant increases, as well as in health physics.

The actual personnel on board are shown in the two righthand columns; one effective last year and one effective as of October 15th, as the applicant has reported.

And from this you can see that there have been significant increases in number of personnel, having gone from a total of 267 to 380.

They are still down 100 people. Of course, much of that, as I mentioned, is in the training department where, although they have apparently adequate numbers of people on site for the training, this indicates the number of LP&L employees involved.

MR. WARD: So the 380, they are all LP&L people?

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MR. BENEDICT: These are all LP&L people, if I'm not mistaken.

MR. WARD: Then, if we look at the training staff, they're really expecting to have fifty-five (55) people, corporate employees in the training staff?

MR. BENEDICT: Ultimately.

That is my understanding.

Again, they may have their ups and downs, as Mr. Johnson mentioned.

MR. WARD: But right now there are only ten?

MR. BENEDICT: Ten LP&L people.

MR. WARD: But these are supplemented by contractors, at the present time?

MR. BENEDICT: Right. That's correct.

And you can see that they have improved their HP staff by seven (7) people -- that is, they have increased it by fifty percent (50%). You can look at it that way, too, since the end of last year.

Of course, HP people are the not easiest in the world to get.

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MR. BENEDICT: Technical Support Staff is almost up to full strength. Operations the same way. Well, you can see the numbers for yourself.

MR. WARD: What was the reason for this kind of dramatic increase in the approved staff for Health Physics that went up from 17 to 27? Was there some particular reason for that that you are aware of?

MR. BENEDICT: No. I suspect that the Applicant can best answer that. We have not gone into the details of exactly how many people are needed.

MR. WARD: Okay. Perhaps we could hear later on what was the perceived need there to increase that.

MR. BENEDICT: We do have a little concern, and we have mentioned this in the past, that in startup, up above here, we wish that there were more LP&L employees directly involved in that startup operation, even though they are now up to 18 out of an allocated total of 23. We do like to have the knowledge and experience that is gained during startup remain with the company rather than leaving the site with contractor employees.

The same is true with QA. The staff down here near the bottom shows that they have also improved at that position. So I think they are going in

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the right direction of trying to get people onboard of their own.

MR. BENDER: This plant parallel the activities of Palo Verde fairly closely, doesn't it?

MR. BENEDICT: I'm not familiar with Palo Verde. Sorry about that.

MR. BENDER: Is anybody familiar with Palo Verde?

(No response.)

MR. BENDER: Well, if no one is familiar with Palo Verde, there is no point in asking a question, but I was curious to know how that tabulation up there compares with what is planned at Palo Verde for their first unit, just so we have some feeling for the relative approaches of the two organizations. I don't know whether one is better than the other or not, but it would be interesting to see what the matchup was.

MR. BENEDICT: Well, certainly the increase in total number of people in the Nuclear Operations Department is in that ball park range that we have been seeing more recently of plants, and shows their, I think to me demonstrates the Applicant's awareness that you do not run a plant like this with 75 people like was proposed about ten years ago.

MR. SIESS: Bob, there was an implication that only the people listed under startup participated in startup. You didn't really mean that, did you?

MR. BENEDICT: If that is what I said, I did not mean that. What I am saying is we want startup work to be done, as much of that being done by LP&L permanent employees, so that the experience gained does not leave the site as soon as the startup is done.

MR. SIESS: But then I'm sure a lot of those two hundred and some odd people are going to be involved in the startup and will gain experience, will they not?

MR. BENEDICT: Yes, but startup starts, in my book startup begins, well, now, or even before systems are being turned over. I look at it from that standpoint.

MR. SIESS: But you are talking about those 23 people now.

MR. BENEDICT: This is just in the startup test engineers --

MR. SIESS: Now, those 23 people have very special duties for the startup of the plant; right?

MR. BENEDICT: Yes. They are specific --

MR. SIESS: And after the plant is started up, is it ever started up again?

MR. BENEDICT: Every time it is shut down.

MR. SIESS: Is that what you mean by startup

or do you mean by taking things over from contractors, and so forth?

MR. BENEDICT: All right. Let me --

MR. SIESS: Does startup mean just going critical?

MR. BENEDICT: No. No. No. It's the whole business from the completion of construction --

MR. SIESS: But the 23 people that are listed there under startup, what special skills do they have that would not be needed during normal operations, or during subsequent operations, is what I'm getting at?

MR. BENEDICT: Okay.

MR. SIESS: It's a small number. They must have some special function.

BENEDICT: Right. I understand your point now. I think I did not understand it before.

These are the startup test engineers, the ones who are preparing the tests, and overseeing the tests. Where plant operations, themselves, will be done, manipulation by the plant people. You are right, their talents tend to be somewhat special.

MR. SIESS: Well, what would be wrong if those people were a crew that came in from say combustion, or wherever and just did the startup, and then left and went and worked on startup for another plant?

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MR. BENEDICT: Which is what they do.

MR. SIESS: So what's the loss then, --

MR. BENEDICT: Specifically, in the --

MR. SIESS: -- if you have to use contract people for that?

MR. BENEDICT: We certainly do not object to the use of contract people per se. We just want to make sure that there is a lot of rubbing off of their experience in performing these tests where there is a lot of learning about how the plant operates, systems operate during this testing period. This is basically what I'm trying to get at. I guess I'm not saying it very clearly.

MR. BENDER: Bob, what you are saying makes very good sense, but it seems to me in order for the Staff to have some kind of judgment they might consider developing some kind of a ratio between those people that are involved in the startup that come from outside contractors as opposed to those that are part of the permanent staff, just so there's a criterion for saying that some fraction of the expertise remains when the startup crew disbands, because there are always startup -- I think you are right; every time you shut down for something some fraction of the startup activity has to be repeated again. Not all of them, but some of them.

MR. BENEDICT: I think you have a good point,

Mr. Bender.

MR. ZUDANS: Could I ask a question relative to the item Onsite Safety Review. Out of 9 there are 4 people indicated. What is the function of this group, and how could they suffice during the construction, if 9 is required?

MR. BENEDICT: The Onsite Safety Review Group is what is performing, will be performing the ISEG function, the Independent Safety Engineering Group function, that we like to see on board several months prior to fuel load, but need not be extremely early. We have pressed for them to get these people on board.

There are two groups. I must admit a lack of understanding. Perhaps the Applicant will be able to address this. There are 9 people shown there. There are two groups, not all of those 9 are necessarily doing the ISEG function.

MR. ZUDANS: In other words, this particular slot does not specifically address the construction aspects of safety?

MR. BENEDICT: That is correct. It does not address construction.

MR. ZUDANS: And the people that are on board can take care of construction aspects, and the new ones to be added will be required later when the plant goes into

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operation?

MR. BENEDICT: Yes. The Independent Safety Engineering function is a requirement for operation of the plant. It has not been applied to review of construction.

MR. ZUDANS: Okay. I would like to ask another question with respect to startup. Of the 23 people projected that would be on the Staff, what fraction do they represent of total startup force of contractors that are on board during this time? How many total people are actually associated with that slot?

MR. BENEDICT: I cannot answer that. I don't know. Perhaps the Applicant can.

MR. WARD: Did you want to get an answer now?

MR. ZUDANS: No. When they will come up, they can remember the question.

MR. WARD: I would appreciate it if you would remember it, too. We are getting a lot of these.

MR. BENEDICT: We had, since last year when we had done our last review the Applicant has filed a couple more FSAR amendments, and in the most recent amendment that just recently came in we found that in looking at the qualifications of two of the positions, the qualification requirements for two of the positions proposed don't seem to us to be as high a level as they ought to be. The Assistant Plant Manager of Plant Services

is listed as being equivalent to an, in accordance with the ANS 3.1 Standard, being a supervisor not requiring an NRC license. However, when you look at the details of that this person only requires minimum of experience and high school diploma. When you see what this person is involved in, this Assistant Plant Manager serves as a member of the Plant Operations Review Committee. He manages the Health Physics Department, and the entire Technical Support Department.

He also manages the entire plant organization in the absence of the Plant Manager, and the other Assistant Plant Manager for Operations and Maintenance. So it is our position that the Assistant Plant Manager of Plant Services should meet the qualification requirements of a Technical Manager as prescribed in Section 4.24 of the ANS Standard 3.1.

We have a similar problem with the STA coordinator, where the --

MR. WARD: Could we stay on that a minute? Is that -- Do you think that the ANS Standard for this job is inadequate, or do you think they just applied the wrong standard to what this man's job really is?

MR. BENEDICT: I think they applied the wrong standard to what this person should be doing.

A similar situation has come up

with the STA Coordinator. They have an STA Coordinator who is a functional supervisor of the STA's when they are working as STA's. He sets the training requirements, and his responsibilities include the review of records, logs, and other documentation generated by the STAs for completeness, accuracy, and technical content, insuring that all STAs are apprised of significant plant situations, and so forth.

Again, the Applicant does propose that he be a supervisor not requiring an NRC license. We feel that in light of the responsibilities of this position this person ought to have at least the qualifications of the STA.

MR. CATTON: At present he doesn't?

MR. BENEDICT: At present the FSAR commitment does not require that. We just recently got in the resumes of peoples that have been brought on board since last year and have not had a chance to go through their resumes, but the qualification requirements have been stated in the FSAR, so at least we got to that point.

MR. BENDER: There's a wide range of viewpoints about those qualifications, actually, isn't there?

MR. BENEDICT: Yeah.

MR. BENDER: And so we really don't know that we have a standard that we can --

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MR. BENEDICT: That is correct.

The other point I wanted to mention is recently the Assistant Plant Manager for Operations and Maintenance resigned. The individual who was then in that position, together with the Operations Superintendent, each of them, and both together had extensive experience in commercial nuclear power plant operations. This is a point that we noted in our SER recently. These two fellows were quite important in our evaluation. The Applicant has stated that he is recruiting for that position, and because of that significant reduction in the plant organization's operating experience we will want to review the qualifications of whoever they hire for that, or appoint to that position to try to maintain the commercial operating plant experience.

MR. BENDER: Did the man that had the job before leave for some understood reason?

MR. BENEDICT: We do not know what the particular reason is for his having resigned. Perhaps the Applicant can approach that.

MR. BENDER: This is not a meeting to discuss that matter, but it is just interesting to know whether the attrition is coming about because there are better opportunities elsewhere, or whether it is coming about because of difference in philosophy between management and

personnel. We can look into it at some other time.

MR. ZUDANS: Could I ask you a question relating to Quality Control and Quality Assurance? Quality Assurance Staff, how many of these people are strictly construction related; how many are on the construction? All of them?

MR. BENEDICT: I'm afraid our review does not get involved in the details of the QA and QC program. That's handled by another branch and is evaluated under Chapter 17 of the FSAR. I'm afraid I cannot answer those details.

MR. ZUDANS: Well, maybe Applicant will know.

MR. BENEDICT: Yes.

MR. WARD: Any other questions for Mr. Benedict?

(No response.)

MR. WARD: All right. Thank you, Bob.

Let's see, Mrs. Black, did you have any wrapup comments?

MRS. BLACK: No, I didn't.

MR. WARD: All right. Well, let's take a 10-minute break. We'll come back at five after 10:00 and ask Mr. Maurin to lead off.

(A short recess was taken.)

MR. WARD: We've had a request that the

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people at the tables up here use the microphones. The people in the back of the room are having trouble hearing the wise comments and questions.

MR. MAURIN: Good morning. I am Lee Maurin, Vice President of Nuclear Operations for LP&L, and this would be our agenda for the day. I'll discuss matters pertaining to staffing.

Dave Lester will talk about the integration of contractors.

And then down below Zena Sabri and Charlie Toth, and Don Lowe, on the next page will talk about training.

Now, these are the subjects that they will cover, but they won't be jumping up and down. Zena, when she gets up will say everything that she has to say about these subjects, and then turn it over to Charlie.

And that's the remainder of the agenda.

And my remarks will be centered around these topics. These are the milestone events associated with the unit.

The ECCS Flow Test, and the Cold Hydro were actually completed some 9 days ahead of schedule. These are the start dates. Our next significant

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test, of course, is Hot Functional, presently scheduled for January 18th, 1983. And it's a tight schedule, but we are working very hard to make that.

MR. BENDER: Excuse me, Lee. The schedule you are showing, do these have to be done sequentially? I mean if you miss one date is that incremental and move the next date, or does it not?

MR. MAURIN: Dr. Bender, I don't know that it would move them day by day, but right now in order to fit into the overall schedule, as an example, the integrated leak rate test is now scheduled after hot functional. It has to come now after hot functional the way the events are scheduled.

MR. BENDER: Okay. I was just trying to get it clear.

MR. MAURIN: This chart will be a little different than that shown by Mr. Benedict, because we are out to November 5th, whereas, his chart showed staffing as of October the 15th, so that's the difference.

I think there is a couple of significant things here. One of them, of course, is that we have been doing, I believe, a significant job of staffing the plant. We still have three people devoted full time to recruiting and staffing; two contractors, and one full time from Louisiana Power & Light Company.

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You will note that the training staff has been increased from an approved 11 to a currently approved 55, and on board now hired as of November 5th are 13 people.

I would like to say a couple of things about this. First of all, since Dr. Sabri took over in December of last year she, of course, has been very busy, and so she has had to priortize her activities. She has emphasized getting the training job done. And as a result of that the actual submission for a permanent chart was delayed somewhat. But foremost in her mind was getting on board qualified people, whether they be LP&L people or contract people to get the training job done, and we believe that we have done that, and we believe that we are on course now to having trained qualified people by fuel load.

She has now embarked on staffing up her organization. She has the key managers on board now, and she has a high degree of optimism in getting many people in her chart, chart positions filled within the next month or two.

The comment was made that perhaps this organization is too large. I think maybe there's about a couple of comments that might be made there. First of all, there was a workload analysis performed that

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justified these number of people.

Then in addition to that, Dr. Sabri is going to be charged with doing the fossil training within Louisiana Power & Light, also. Now, we don't believe that this will be to the detriment of nuclear training, because that's going to take the highest priority, but we think that as a result of that she will get even more of the things that she needs to do her job, because the overall training job will be even larger.

The third thing I think to recognize is that even though you have an organization chart approved of this magnitude, rarely do you see an organization chart that 100 percent filled. There's always a few vacancies, due to attrition.

The other thing to mention is our QA Staff, you will notice it has been increased from an approved 21 to an approved 32, with 26 people having been hired as of November the 5th. Our QA Manager Tom Garrett believes that he will need some contractors during this peak load period to accomplish his job, but that the steady state reqirements of his deparmtent will be somewhere around 32.

Back in February when we saw you we showed this slide, which has to do with vital personnel, and at that time we had 41 of the 45 which had been committed

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for. We now have 44. And for one brief period we had all 45, but then we lost the Assistant Plant Manager, Operations and Maintenance. The question was asked why he left. The reason, as stated to me, was that his family had difficulty in adapting to the area. In addition to that he was able to re-establish with the company that he had left. He had not been able to sale his house at the previous location, so the move was a convenient one.

On this slide I'd like to point out a few other things, one of them having to do with the nuclear operations supervisors. You notice that we have six here, had committed for 6. We now have 6 who have been previously licensed. We have an additional individual classified as a nuclear operations supervisor who had been also an STA in an operating plant.

The Assistant Plant Manager, Technical Services, which is not shown on this chart, but who had been alluded to before, is really a college graduate; he is a mechanical engineer. He has now -- He has been with Louisiana Power & Light for some 15 or 20 years. I forget exactly the correct number, and he is now full time in training for an SRO. He expects to achieve an SRO by fuel load.

By the same token, the shift technical advisor was a previous SRO. He was SRO licensed

at another plant. He has also been released for full-time training, and we would expect him to have an SRO by fuel load.

MR. RAY: Before you take the chart down, Mr. Maurin, --

MR. MAURIN: Yes, sir.

MR. RAY: -- I see the word "auxiliary" in both of your operator listings. Where are the ROs and the SROs?

MR. MAURIN: The SROs would be in the nuclear operations supervisor, and the ROs would be in the nuclear auxiliary operator. Really now we call those nuclear plant operators. Before I am done I'll show you an organization chart of the operations department showing the slots that are filled and those vacant, and you'll be able to see that better.

MR. RAY: All right. But before you leave the chart, as of now what's your position on the ROS you need versus hires?

MR. MAURIN: This --

MR. RAY: If you can tell me, I'll be satisified.

MR. MAURIN: Okay. But I think we can see it better on that slide. This is the Operations Department, and is headed by Bud Peeler, who will also have an SRO. He

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was previously SRO licensed, and now in the nuclear operations supervisors, the individuals Booher, Olson, Crouch, Maley, Davie, Perhala, were all previously licensed. Joe McCann was previously an STA.

And then the individuals under Nuclear Plant Operator are all in licensing training, and they may go up for SROs, depending upon their level of training and qualification at the time. There are others down below in the Nuclear Auxiliary Operators who are presently in training.

MR. WARD: Let's see. I need to try to understand this. Your Nuclear Operations Supervisor, those are SROs who will be the shift leaders, shift supervisors?

MR. MAURIN: That's correct.

MR. WARD: Okay.

MR. MAURIN: And, Mr. Ward, they are presently classified as Nuclear Operations Supervisors.

MR. WARD: Okay. They have been selected. We had this little discussion earlier, and --

MR. MAURIN: That's right.

MR. WARD: -- your Shift Supervisors SROs have been selected.

MR. MAURIN: Yes.

MR. WARD: Now, your previous table shows 6

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hired and committed to this. You've got 11 of them up there.

MR. MAURIN: Mr. Ward, the commitment at that time, at the time we made that commitment we already had five or six Nuclear Operations Supervisors, but none had been previously licensed. None had had experience in an operating plant. So our commitment then was that we would get six Nuclear Operating Supervisors who had had previous commercial operating experience. All right. We have met that obligation, of course. Six of these individuals have been either ROs or SROs at another plant. I think there are four SROs and two ROs.

MR. ZUDANS: So the previous chart did not show the totals? It showed only committed additions?

MR. MAURIN: That's correct. Somewhere in our evolution of discussions this shortcoming was pointed out, that we didn't have experienced people on shift, and we committed at that time to get 6 Nuclear Operations Supervisors with previous experience. At that time we were short in staffing the Operations Department, and we also said that we would meet those commitments for hiring, or for recruiting.

MR. RAY: I guess I'm suffering from the early stages of senility. It suddenly leaves me as to how many ROs you will need at fuel loading time, and how many

of those men you have aboard. Can you give me an explicit answer to that?

MR. MAURIN: I'll have a chart that shows that exactly. We now have 38 people in operating training for licenses. We will need to maintain a 6-person shift -- we will need two SROs per shift. That will be 12 total SROs.

By the same token, we are committed to have two ROs per shift, and if we use a 6-person shift there, that would be an additional 12, we would need 24 to get the 6-person shift.

Now, the minimum shift would be one with four people per shift, and in that case then you would need 8 SROs and 8 ROs.

MR. RAY: So of the 24 you need you have 36, you say, in the pipeline?

MR. MAURIN: We have 38.

MR. RAY: 38 in the pipeline?

MR. MAURIN: In the pipeline, yes.

MR. RAY: Thank you. I didn't mean to get ahead of you.

MR. PEARSON: Can you comment on the offsite support? What is an Offsite Training Supervisor. The Nuclear Training Director, I assume is Dr. Sabri?

MR. MAURIN: Mr. Pearson, at this time there

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was different organization chart than that which we now have, and it showed under the Training Director two branches. One was for on-site training, and the other one was for offsite training. That no longer exists.

As you will see in Dr. Sabri's presentation, her training and organization possesses three branches, one for the actual instruction, one for the development, one development, one implementation, and then one for the facilities and the simulated laboratory training, and the like.

So it's a different situation now. But we think that we have met that commitment.

MR. BENDER: All this does is provide fresh ability for the commitments, really.

MR. MAURIN: That's right.

MR. PEARSON: What is an Offsite Training Supervisor?

MR. MAURIN: We have one offsite group that is the Nuclear Project Support Group located in Gretna in the Metropolitan New Orleans area. Training is required there. Training is also required in our corporate office, and as envisioned then that individual was to handle that training.

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MR. MAURIN: You had also asked to be shown the positions that are vacant and in your package are all of the organization charts for the nuclear operations department, which shows by name the slots that are occupied.

Now, these are by Louisiana Power and Light employees. No contractors and shows the vacancies.

As an example, the assistant plant manager , operations and maintenance, is shown vacant on this chart.

The other chart, of course, is this one which I have shown and there is only one case, I believe, where we deviate from what I just said, showing only LP&L contractors,and that is up there in nuclear operations supervisors and we show four contractors.

Now, the purpose of those is to assist in the ongoing testing while the regular supervisors are pulled off for training.

Now, unless you want me to, I won't show all of the other organization charts, because it's voluminous. There's many of them but I will if you would like me to.

MR. WARD: Let's see, you're nuclear operations supervisors, six of those have previous SRO or RO experience?

MR. MAURIN: Yes.

MR. WARD: And you say you're committed to using those as your initial shift leaders?

MR. MAURIN: Yes.

MR. WARD: But you have other who will be doing miscellaneous support work and eventually, they'll be available as shift supervisors?

MR. MAURIN: Correct.

The company classification is Nuclear Operations Supervisor but from a functional shift standpoint, six will be designated as shift supervisors. The other six will be designated as control room supervisors.

All right.

Now, once everybody is licensed and has gained experience, then all twelve (12) will rotate through all positions, and they will all be equal.

For the time when we start up, we anticipate that those with -- who have had previous experience, previous licenses, will be the leaders on the shift.

MR. WARD: Okay.

So the twelve or the eleven people you have up there are the entire complement of SRO's? Is that --

I'm having trouble --

MR. MAURIN: That's the entire required complement of SRO's, except we're looking for one more, the twelfth, right there.

But if other people are qualified to take the examination for SRO,we will permit them to do so and it's

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quite possible that in the lower categories, we might wind up with some people who will hold SRO licenses.

They will not, however, at that time, necessarily become nuclear operations supervisors. They could be rated company classification as nuclear plant operators or nuclear auxiliary operators.

MR. WARD: So they'll be functioning as RO's or auxiliary operators --

MR. MAURIN: That's correct.

MR. WARD: -- but will be available to be promoted, if you have the slots open up or want to promote them?

MR. MAURIN: That's correct.

MR. WARD: Have you set up -- when do you anticipate -- as I understood from the previous discussion, all these people are now in training full-time.

When do you anticipate setting up your final -- your permanent shift organizations?

MR. MAURIN: We will have a shift organization set up for hot functional.

Right now, we have , in order to accomplish the in-plant training, the walk-throughs, the qualification card training -- we have two, three, four plant operators or auxiliary operators assigned to each nuclear operation supervisor.

They have the responsibility for taking the people now through the training.

They will not necessarily, however, be the people who will be on their shift. Further, the shift organization is not necessarily going to be one in which all members of a shift rotate through concurrently.

All right.

It might be that the nuclear operations supervision or supervisors, would have a different shift rotation than would the others.

All right.

So that you would have some cross training then between supervisors and between operators.

MR. WARD: Oh, I see.

MR. MAURIN: I suspect that's that way it is in many operating plants.

MR. WARD: So you don't have permanent terms, then?

MR. MAURIN: I think I'm saying, Mr. Ward, that the decision has not been made as to whether or not there will be permanent teams or whether the rotations might be independent in the different classifications.

MR. WARD: But at the present time, you do have -- you are using a supervisor-operator temporary set-up to supplement the training and provide follow-up?

MR. MAURIN: Three or four plant operators are auxiliary operators reporting to one supervisor, who is responsible for their training. Now, in particular, the qualifications card training.

MR. ZUDANS: Let's see.

In the same context, how is the control room manned now?

MR. MAURIN: Now?

MR. ZUDANS: Now.

It is essentially ninety-five percent (95%) complete, so you have people in the control room. Who are those people?

MR. MAURIN: At this stage of the game, our operators in training and, of course, not all of these are in cold license training.

The operators in training, right now, are doing eight hours of classroom and study work and an additional four hours in the plant, five days a week.

So they are working twenty (12)hour days, five days a week.

For the period that they're in the plant, three or four of the operator classifications, then report to one supervisor up there, who is responsible to see that they complete their qualification card training.

MR. ZUDANS: That is not really the question.

There is a control room right now. Somebody mans that control room. Who are those people and how is that shift arranged? And it's manned for twenty-four hours, I assume.

MR. MAURIN: That's correct.

MR. ZUDANS: Now, who are those people that are in the control room?

MR. MAURIN; Some of the nuclear auxiliary operators and the nuclear auxiliary operators in training, plus the four contractor supervisors, are the people who are on-shift now, to do the ongoing operations required for start-up between now and hot functional.

But at hot functional, which is a six-week evolution, we expect then to have the people who are now in training integrated into the shift schedule then, so that they are going to be the ones who will be performing the operations during that evolution.

MR. BENDER: Sir, have you taken over the control room? Are you running the control room now?

MR. MAURIN: Yes.

MR. BENDER: Do you have people that --

MR. MAURIN: Through these people.

MR. BENDER: But are there people actually there assigned to control the button pushing and that sort of thing?

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MR. MAURIN: Yes.

MR. BENDER: Who are they?

Are they -- they're not -- the nuclear auxiliary operators don't normally do those kinds of things; do they?

MR. MAURIN: They will not on a continuing basis, but for the time being, they are performing those minor operations, now. The starting of a pump, the stopping of a pump or something like that, under the supervision of the contractor operations supervisors.

While the other people, the licensed people are in full-time training.

You see, the situation we get caught in, in a nuclear plant is, even though we'd like the plant staff to do everything, right now we have approximaely 400 people in the nuclear operations department and we have 800 contractors and consultants assisting us.

So, to do everything, would mean that 400 people would have to do what 1200 people are doing now. So, we have to prioritize our activities.

MR. BENDER: I understand that.

I was just a little surprised that the people that you have in training that will eventually take over the control room are not at the moment actively running it. I think that was the thrust of Dr. Zudan's question.

MR. WARD: Yeah, but that's what he's

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aiming to do for the hot functional test. It's just right around the corner.

MR. ZUDANS: Is the SRO license required to be a supervisor if the plant has not been hot functionally tested yet? Are these contractor people licensed, also?

MR. MAURIN: They were licensed at one time. They will not be licensed on Waterford 3.

MR. ZUDANS: So, if I would now -- you do have obviously a shift structure right now in the control room? Each shift is supervised by a contractor?

MR. MAURIN: Yes.

MR. ZUDANS: You have four of them?

MR. MAURIN: Yes.

MR. ZUDANS: Now, how many of those people that are listed in nuclear operations supervisors slot are standing by with these contractor people to be trained?

Are any of your people also on four shifts in the same position?

MR. MAURIN: Not at the present time, Dr. Zudans.

At the present time, the people who are in licensing training are devoting full time, sixty (60) hours a week to training. This week they will be twelve (12) hours either in academic training or in study for academic training and four hours will be devoted to the plant for

walk-downs and studying of the systems and the like.

MR. ZUDANS: Do you have a schedule which says that at a given time,in the calendar, at sometime in the future, your people will begin to stand by these contractor people to get their training?

MR. MAURIN: When hot functional testing begins, presently scheduled for January 18th, I believe it is, then these people who are on-training, will go on shift to accomplish that evolution.

Now , that's when, of course, you practicaly run the whole plant at that time. That evolution is estimated to take about six weeks.

Following hot functional training, they go into a period of intensive review, in preparation for the examination, presently scheduled to be given in the first week in April.

MR. CATTON: Is it common to have training programs that are sixty-hour weeks? Even the army doesn't do that.

MR. WARD: Well, they said they were trying to catch up.

MR. MAURIN: That's right.

MR. CATTON: I'd like to hear their training officer comment on that approach to catching up.

MR. WARD: Okay.

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Let me ask a related question.

Mr. Johnson earlier expressed concern about whether the operators in training were spending enough time in plant walk-downs and that sort of thing.

Is that what you've -- is your twelve-hour day responding to that?

MR. MAURIN: Yes, it is.

MR. WARD: Okay.

You wanted to get a professional trainer's opinion on whether --

MR. CATTON: Whether sixty hours a week is effective. I kind of have my doubts.

Another comment Eric Johnson --

MR. MAURIN: We'll be doing this, Professor Pearson, for about two and a half months. It's not a situation where we'll be going on for eight, ten months or anything like that.

Dr. Sabri will comment on this later. In my own discussion with her, I believe she indicated to me that this will be effective for this period.

People will still be getting off two days a week.

MR. CATTON: I don't know anything about the intensity and so forth, but sixty hours seems a lot.

There was a comment by Eric Johnson about the

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follow-up program, to see if your training objectives were being met. Would you like to comment on his criticism?

MR. MAURIN: I think we have done that. We now have in place a chart which shows the systems that are to be covered and learned by each individual each week, with a check-off mechanism and that chart is displayed prominently around the plant.

One will also be in my office, to make sure that we keep up with this thing; that we are not falling behind.

We feel confident that with the training program now in place, that we will have qualified licenseable operators by April.

Dr. Sabri will mention this also, but in February, we have contracted the services of Jerry Holman, who was a prior NRC Examiner and now has his own company. But he will come in to do an evaluation on us. He did an evaluation in August. He's going to come by on a monthly basis to do many evaluations, but, then, in February, he'll come by to give NRC-type examinations to the people, so that we'll know for sure where we stand.

MR. CATTON: It will be interesting to have your training officer also comment on that approach to passing the examination.

Jerry Holman is very effective and I think that

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with his help, you will pass the exam but I wonder if you will pass the exam with properly trained operators.

MR. MAURIN: We are sure that we will.

You asked me also to address the amount of experience that we now have within our nuclear operations department.

The headings here are misleading. The heading to the left is really Total Nuclear. The heading in the middle is really Commercial Nuclear, as defined in the Regulatory Guides. In other words, experience in design, experience in start-up counts and then the right heading is really Nuclear Commercial Operations, which is that experience gained with commercial operating plants.

You'll notice that back in March, we had those levels of experience and we have now improved that.

In Nuclear Commercial Operations from 209 to 252.

In Commercial Nuclear from 341 to 1010 and in Total Nuclear, from 1490 to 1826.

One other comment.

Commercial Operations is included in Commercial Nuclear and then those two are included in Total Nuclear. So these are not separate and distinct columns.

But we think that we have seeded through the whole organization a nuclear experience and background

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which is adequate, which will be adequate, and we haven't stopped looking for experienced people.

I believe that I have really already touched on this. You'll notice in license reactor training, we have thirty-eight (38). The twelve and twelve desired would be for a six-person shift. That would be six RO's and six SRO's, and the minimum required, of course, is four RO's and four SRO's. I mean, eight and eight.

Now, in one case the desired represents about two-thirds of the thirty-eight (38) passing the exam .

You'll notice also that we anticipate the operations superintendent getting an SRO. The assistant plant manager, technical services, getting an SRO, the STA coordinator an SRO and then the plant and then some other people also getting SRO's, for a total of about thirty-two (32) being desired.

MR. SIESS: I am a little confused by your terminology.

Required is based on four shifts? And desired six shifts?

MR. MAURIN: Yes, sir.

MR. SIESS: Can you operate with four shifts and a training program?

MR.MAURIN: It's not a desirable thing . The desirable thing is to have six people per shift position.

But, as a result of the situation that now exists within the industry, the demands for licensed people, people going off to other utilities and in the contractors and the consultants; there are plants now operating with four people per shift and, as far as I know, they are maintaining their requalification requirements, but, of course, with difficulty, with a lot of overtime.

MR. ZUDANS: To the previous slide , I would like to ask a question.

Could you point to these positions, the ones that have been with the company since the beginning of construction. Are there any in any of these categories?

Or let's say, since early stages of construction.

MR. MAURIN: We began construction, really, in about 1974.

MR. ZUDANS: Right.

MR. MAURIN: Two or three of our senior reactor operators were with the company at that time but in fossil plants.

The assistant plant manager, technical support, has been with Louisiana Power and Light, as I said, for some 15 or 20 years and he's been in the nuclear program now for -- I don't know. Eight years, Dave?

Something like eight years.

The maintenance assistant superintedent, I see, previously served in one of our fossil plants and he has been around for eleven or twelve years, but not all of that time at Waterford. Maybe four or five years at Waterford.

MR. ZUDANS: Thank you.

MR. MAURIN: And I don't know that those numbers are exact.

There was a shift technical advisor program given at Waterford 3 under the training department and these were all engineering graduates. The bulk of them relatively young and beginning the program were eighteen. Fifteen successfully completed the program.

They came from the sources listed at the bottom. We have since lost one to another company, so that we now have fourteen engineers who have successfully completed the STA program and we have three more who we feel confident, the three who did not complete, we feel confident that they will be able to complete.

Some of them didn't complete because they didn't have the opportunity -- it wasn't possible to go to simulator training and that kind of thing.

MR. CATTON: So you have seventeen?

MR. MAURIN: We hope to have seventeen, yes.

MR. CATTON: Of the seventeen, how many have had actual plant experience?

MR. CATTON: Three or four.

MR. MAURIN: Four.

MR. CATTON: And what was that experience?

MR. MAURIN: I'm going to ask -- I can't give you that but I will ask Dave Lester to address that when he comes up.

There was one other question I should answer while I'm here.

The question was, why has the Health Physics group grown?

I think it grew in response to a couple of things. One of them was that our Health Physics people were able to get around to see what the other plants were doing and were able, from that experience, to justify more people.

The other thing was that there is a new commitment that there be a health physics technician on shift. So that added to the total number.

Those two things above all others.

MR. WARD: Lee, why do you want so many STA's? Are you just training a lot? Do you think that's good training? I mean -- the STA program only called for six of them;right?

MR. MAURIN: Mr. Ward. Yes. If they're on shift.

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We are approaching it from a duty-day concept where an STA will have a full duty-day, twenty-four hours, when he comes up on the list.

We believe now and, of course, I know there's a lot of discussion -- a lot of pros and cons about that -- but at the time we started, we believed that we could best fulfill the needs of the company plus the career opportunities for those people, by approaching it in that manner.

MR. WARD: That's right. I recall you saying that before. I understand.

MR. MAURIN: Right, and to give it continuity, the person who headed the STA group would be full-time and that's what we call our STA coordinator.

MR. RAY : What do you mean by a twenty-four hour duty day?

MR. MAURIN: The person would be available as a shift technical advisor for the full twenty-four hours of the day.We would provide a little apartment right there at the plant and he would spend whatever time is necessary within the plant, to keep abreast of what is going on and he would be available on-call within a matter of minutes at any time.

He would also be notified throughout the day when important changes had occurred in plant operations.

MR. RAY: So he's not standing, looking over the shoulder of the operators, as to what's going on on a twenty-four hour a day basis?

MR. MAURIN: No.

MR. RAY: And you don't have anyone doing that for twenty-four hours? I mean, any three doing that for twenty-four hours?

MR. MAURIN: No, we would not have that, Mr. --

MR. RAY: You have one, presumably, on the day shift and the other two shifts, he's in residence but not with his hand ready to touch --

MR. MAURIN: To go beyond that, we had not envisioned on this duty day that person necessarily ever being in the control room, looking over the shoulder of the operator.

It could be that for his normal eight hours, that he would utilize those in his normal duties, but be available right there and kept abreast of what was happening within the plant.

MR. ZUDANS; Now, I think I understand.

He has other assignments normally?

MR. MAURIN: Yes.

As an example, if this were a plant engineer and he came up on his duty day, he would report, if the shift change were at 8:00 o'clock, he would report, go up

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to the control room, get oriented as to what was going on in the plant and full familiar with what was going on in the plant and then maybe return to his normal duties in the plant engineering group, until the end of the normal work day.

Now, as plant evolutions occur or operations occur that are significant -- you know, say a ten percent change in load or something like that, he would be made abreast of that and he would be available to go up to the control room to see what was going on.

Now, following the regular work day, he would spend some time in the plant but he would also live in that little apartment there, for the day, where he would be free to do as he chose and then -- but would be available for call out.

MR. RAY: He's aboard ship, in a strict sense?

MR. MAURIN: He's aboard ship.

MR. RAY: So I can see the analogy.

MR. ZUDANS: Now, how does it physically, -- now, then, the next STA for the next day, would they rotate in this case or, if a person --

MR. MAURIN: What we had in mind is, if there were seventeen, there would just be a seventeen-day rotation, then each seventeenth day an individual would come up for duty.

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MR. ZUDANS: So in other words, each seventeenth day, he would be available, essentially, twenty-four hours a day.

MR. MAURIN: That's correct.

MR. ZUDANS: And that's the only day he would reside in that apartment?

MR. MAURIN: That's correct.

MR. ZUDANS: You would have to change laundry very day? Right?

MR. MAURIN: That's right.

MR. BENDER: That's not an STA job?

(Laughter.)

MR. ZUDANS: That sounds very interesting. That's a very interesting concept.

MR. MAURIN: We didn't think it was necessarily unique. I believe we thought that other people were doing that.

MR. RAY: Your tentative breakdown by department, is this where they are now assigned in the organization and that's Waterford? That isn't any central engineering organization, for instance? They're on the scene, at Waterford.

MR. MAURIN: Plant engineering would be at the Waterford plant. Nuclear engineering at the plant. Start-up presently at the plant. Nuclear Project Support Group

in the metropolitan area of New Orleans, in Gretna.

MR. RAY: Thank you.

MR. MARUIN: Okay.

Well, if there are no other questions, next up will be Dave Lester, the Plant Manager.

MR. LESTER: My name is Dave Lester. I am Plant Manager, Waterford 3.

My presentation will be on the items shown in this slide.

(Slide)

Before we begin, I'd like to address the question of technical advisors. Four of those individuals have previous experience, of which three were Navy nuclear engineering officers of the watch. The fourth was a LP&L employee we sent to Arkansas Nuclear 1 for a couple of years for training.

Now, in addition to that training, the shift technical advisors beyond the training program itself have been sent to other utilities for undergoing start-up testing at the present time.

In fact, further along in my presentation, I will show you how we plan to use those shift technical advisors in our start-up program.

The integration of contractors into the start-up program was covered at our March meeting, if you recall,

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and the slides I'll use are very similar to those.

I intend to point out the differences which have occurred since our March meeting with the reps.

You might recall, for example, this slide wherein I presented to you the arrangement we had for conducting prerequisites and preoperations tests.

(Slide)

If you recall, our test program is based on three phases. The prerequisite wherein we test components. The operational, wherein we test systems and, finally, integrated testing, some of which really aren't integrated systems but just large tests like, for example, the integrated heat wave tests.

The first two phases, prerequisite or component testing and preoperational tests, are conducted under an organization -- this organization.

The differences in this slide from the one we presented at the March meeting, are the fact that we have changed a little bit of the arrangement of the unit coordinators in start-up and mainly the fact that LP&L intends -- has and intends to partcipate more in start-up.

For example, you will recall that I spoke about the permanent organization being in the solid line and the start-up organization being in the dotted line and the situation such that as we complete start-up, the start-up

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folks leave and we remain with the operating staff.

A key individual in each of the disciplines, was the start-up and maintenance engineer and at the time -- at the March meeting, I discussed the fact that this individual was responsible for both development of unit maintenance software procedures and so forth, as well as to conduct the start-up testing on these electrical lines and mechanical components.

Since that time, our maintenance assistant superintendent has assumed full responsibility for the permanent maintenance functions. The start-up and maintenance engineer no longer has to worry about that. We're far enough along in our procedural development and in actual practice in the use of the procedures, that permanent maintenance assistant to the superintendent is capable of handling all of the pure maintenance functions.

He has helped in supporting start-up and in that case, he does still report to a start-up and maintenance engineer.

You will recall also that we only talked about electrical but I indicated at that time that there were similar organizations both in mechanical and INC and the main feature of the discussion had centered around the fact that test teams got their engineering expertise from start-up; got their operations expertise from permanent

operating staff and got their craft expertise from the maintenance staff.

Now, I'd like to point out to you, our electrical maintenance, mechanical maintenance and INC maintenance departments are much larger than just the permanent staff. We mentioned the fact that if we staffed for this peak period permanently, we'd have to have 1200 people on the staff and we just don't have that many.

So, in that case, electricians, mechanics, technicians and operators, sometimes --when cold license candidates are in class -- may be contract personnel but they are operating in the permanent organization, permanent maintenance or permanent operations organization.

You might also recall that we discussed the fact that LP&L conducts its testing even down to many of the construction tests. We have control of all testing within LP&L.

MR. WARD: Okay.

So everybody in the solid blocks are LP&L people and the broken line blocks are contract people?

MR. LESTER: No. That's not true, Mr. Ward.

MR. WARD: Not quite true.

MR. LESTER: Everybody in the solid blocks are LP&L people except that we supplement with contract people down here.

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MR. WARD: Okay. Right.

MR. LESTER: Now, in addition to that, some of these dotted line positions may also be filled by LP&L personnel.

For example, the start-up manager is an LP&L person or one of our start-up and maintenance electrical, start-up and maintenance engineer is an LP&L person. Some of our test directors are LP&L people.

For example, Lee showed you a chart which indicated we had twenty-one people now in start-up LP&L positions.

MR. WARD: Yes.

MR. LESTER: They fill various positions in the start-up hiearchy to keep LP&L -- keep that kind of loyalty in the start-up program.

MR. WARD: Okay.

Now, I think we had a question earlier about -- Dr. Zudan's question about those twenty-three or some fraction of the total start-up organization.

MR. LESTER: Yes.

I have a slide which I'll show you which indicates the number of contract people we have by department.

MR. WARD: Okay.

MR. LESTER: Which will give you some feel for that.

MR. WARD: And where on the schedule that Mr. Maurin presented originally, do these -- do the dotted blocks fade away now?

MR. LESTER: My slide will also show that.

MR. WARD: Will show that. Okay.

MR. LESTER: How we plan to utilize contractors throughout the remainder of the test program.

MR. WARD: I think that's an effective way to show that. It illustrates --

MR. LESTER: I'd like to point out one other thing.

A dotted line is shown between myself and Tom Wallington, my start-up manager. In fact, at the site right now, since our meeting in March, we have assigned a site director who has functional control over start-up.

His purpose is to bring start-up and construction together. I still have administrative control over the start-up manager and, as we move out of hot functional, I'll probably take the lead for the whole site, in getting systems into operation.

That's the intent right now.

MR. RAY: You mentioned in your last statement implications on your long-range plans. Have you firmed up the long-range use of personnel to a point where you know where the LP&L people who are now in broken line blocks

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will fit into your permanent organization?

MR. LESTER: I can't say that we have that figured out, Mr. Ray, but it is certainly on my mind that we have to -- and it's on their minds, obviously, that we have to put those people in the permanent organization.

What we have told them is that we will.

Now, going beyond the prerequisite operations testing and into the integrated testing, that testing will be conducted with the support of the start-up operations in a large measure but, primarily, under my guidance.

This has been a recent change and, frankly, as the result of -- from the fact that we believe we've got an excellent STA program. We have trained our technical advisors significantly at Waterford 3, in addition to the fact that we are sending them off to these other test programs and, as a result of that, we feel that we can now take direct control on the permanent plant staff of the integrated testing or the post fuel load integrated testing.

I should point out that this does not apply to hot functional testing but it does apply beginning with fuel and beyond.

The difference in this chart from the one we showed in March, is simply the fact that this is now a solid line. (Indicating.)

This is a person on my staff who will lead the

entire post fuel load integrated testing and not shown on the slide, is the fact that the tech support superintendent will take the lead in the testing now, instead of with start-up leading, which is a contract man. Very qualified, experienced contract man.

Instead of him leading the integrated test program, Don McGaha, my tech support superintendent will lead the program with this man's help .

By the same token, there is an individual on contract with significant experience also, who will hold the hand of this permanent LP&L test director.

So we fully intend to take full control of the integrated testing beginning with fuel load and beyond.

That organization shows an integrated shift test team. This next slide depicts that.

(Slide)

That shift test team, and again, you saw a slide very similar to this in March. The only difference being that this is now a solid line and that is a permanent LP&L employee and the program will be -- the testing will be conducted under the cognizance of that engineer, along with the shift supervisor and his permanent shift organization.

Of course, there'll be need for contract personnel to fill shift positions. But, again, the thrust of this change is the fact that we now will control it

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directly from the plant status.

MR. BENDER: Excuse me.

Who does the shift test director report to?

MR. LESTER: The shift test director reports to the --

MR. BENDER: It's probably in here somewhere but I --

MR. LESTER: The overall integrated test director.

MR. BENDER: All right.

MR. LESTER: This gent right here.

(Indicating.)

MR. BENDER: I see it. Okay.

MR. LESTER: He is responsible for carrying out the integrated test program.

Obviously, this is a functional organization just for carrying out this test program.

MR. BENDER: Thank you.

MR. LESTER: One of the positions which will no doubt be a contract person, is the combustion engineering representative and we have lined up a number of individuals with experience to fill that position for combustion and for LP&L.

Just for completeness purposes, we will go from an organization like this, during post fuel load

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integrated testing to a shift organization like this, for permanent plant operation and this is no different from what you saw in March.

(Slide)

Lee mentioned that we have a nuclear operations supervisor designated as shift supervisor and one designated as control room supervisor. Either has the shift technical advisor available to him and two RO plant operators and three auxiliary operators. In addition, since he is the corporate representative on site when the plant manager and so forth, the hierarchy, is not there, he also has supervision over the security organization and health physics technicians and the radiation chemists.

MR. WARD: When the plant is operating normally, what routinely -- what fraction of the time do you expect the shift supervisor to be in the control room and what fraction of the time is he going to be out elsewhere with other duties?

MR. LESTER: I would expect him to be out as much as half the time. I would not want him to linger around the control room. His job is to see what's going on on the site.

But that's just an estimate. I don't know that we've made a determination.

MR. WARD: Oh, yes. I realize that. I

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just wanted your estimate.

Thank you.

MR. LESTER: One of the things that we've been very interested in doing is gaining the participation and the experience we have discussed before, within our permanent LP&L staff.

The comment was made that by use of contractors, contractors gain all the experience and leave. Well, I think the last two slides, last three slides, show a little bit of how we're trying to keep that experience on site, but in addition to that, just the process of our test program has called for LP&L participation and this slide just lists some departments.

(Slide)

I'll talk from the slide and give you and indication of what we're doing so far.

Again, I don't want you to get the feeling that when I say the maintenance department is doing all the calibration, that it's all being done by permanent LP&L employees, because there are just too damn many calibrations to be done by our permanent staff. So, to the extent we can use permanent staff, we hope to do so while still having some permenent staff to look out for LP&L's interests in areas that may not be involved in calibrations.

MR. LESTER: But in any event the Operators have been doing the valve lineups for flushes and testing, and so forth, supplemented sometimes.

The Maintenance people have been doing -- Operations have been doing all of the tagouts. The Maintenance Department does all the calibrations for instruments, relay calibrations for electrical, circuit-breaker checkouts.

The Mechanical Maintenance Department, in the case of the core hydrostatic test, did the entire assembly of the reactor. They put the internals in. They put the head on. It was all done with our Mechanical Maintenance Department. In doing these evolutions we have been using permanent plant staff procedures. So our Maintenance procedures are getting a pretty significant workout during these component tests.

Now, I want to say that we have to put more emphasis on specifically using permanent staff people, and I'll tell you how we intend to do that in a minute. But, basically, operations, twist valves, tagouts, Maintenance does all of the testing of the components, using permanent procedures where applicable. Maintenance is also doing all of the metrology for the entire site. Our metrology lab has been audited by several contractors and we do all the calibrations, so forth and so on in our

lab.

Our Mechanical Maintenance Machine Shop is doing quite a bit of the work for other contractors onsite as well.

Quality Control on my staff is doing the quality control surveillance for all of the startup evolutions, as well as the maintenance evolutions. Maintenance, by the way, is also conducting preventative maintenance onsite.

Chemistry is conducting all of the chemistry for the startup program. There is no other chemistry entity other than my staff's chemistry department. We are now located in the permanent lab facilities, and will be involved in doing a lot of check-out of that equipment from here on out in the test program.

Plant Engineering is heavily involved in pre-service inspection. They are doing technical reviews of purchse requisitions, those kinds of things that would be normal evoluations for startup operations.

Security, the entire security for the site is being done by LP&L Security Department.

Yes, sir.

MR. BENDER: Dave, you may come to this, but I'm just struck by this tabulation down here, and it leads

me to ask a question: Do you have any way of monitoring the effectiveness of your chemistry group? Does anybody come in and take a look at what they are doing?

MR.LESTER: It's funny you should ask the question, Mr. Bender. We have gotten so much interest in our chemistry department, that I think we'll have -- we have to have a first-class chemistry department in order to make comments. Our Safety Review Committee includes a gentleman from outside the company, who has made a specific emphasis on doing audits. Our offsite group is developing capabilities to come in and help us in an audit function.

The Quality Assurance Group, Tom Garrett, is hiring, I believe -- Tom, correct me if I'm wrong -- an individual versed in chemistry to do quality assurance checks on chemistry. We had not originally intended to bring it under the Quality Assurance, but it looks like for sure it going to come under the Quality Assurance.

MR. BENDER: Well, that's an important issue that deserves that kind of attention.

MR. LESTER: I'm sensitive to chemistry, and I think I'll support chemistry --

THE REPORTER: I'm sorry, Mr. Lester. You keep dropping your voice, and I'm having a great deal of difficulty hearing you.

MR. LESTER: Okay. Do you want me to get back here to the microphone?

THE REPORTER: I would appreciate it.

MR. LESTER: Chemistry has received a tremendous amount of attention, and it will continue to do so.

For example, we are now looking into the sulphur business that came up as a result of Three Mile Island Unit I, and plan to -- we are looking into it to see what we can do to get controls over those trace elements in the primary cooling system.

MR. ZUDANS: You described the LP&L staff participation in many of these groups. Are these people also at the same time going through the training?

MR. LESTER: They are going through training for their permanent positions. They are also involved, not as much now as previously, in the developmental things that are required to make a staff operate once we are ready.

Dr. Zudans, our developmental work is now nearing completion, and now our emphasis on the plant staff, I think you could talk to just about anybody on the staff, is an objective that I've established for people to practice operations, or to gain an operational mentality.

MR. ZUDANS: Essentially the ones you have described here are fully qualified to do the --

MR. LESTER: They are qualified to carry out their functions in startup for sure. I'm not saying that we've completed all of our training program, and I think that won't occur until sometime shortly before fuel loading.

MR. ZUDANS: This type of approach should make the transition really very easy.

MR. LESTER: That's our intent. The name of the game right now from here through fuel load will be practice operations.

MR. ZUDANS: Very good.

MR. RAY: As I recall it, your instrumentation and control system surveillance test will be a maintenance function; am I right?

MR. LESTER: That's correct.

MR. RAY: How are you --

MR. LESTER: That's correct for the tests that really require an I&C Technician. Some of those tests may be able to be done by an operator on shift.

Most of the -- If you are doing a calibration obviously you're going to have an I&C Technician doing it. Whereas, if it's just to check a meter, or something like that, an operator may be able to do it. But

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those technical specifications are now, they have been assigned to all departments. Primarily you are correct, though.

MR. RAY: And I think it's a matter of industry record that a very large number of SCRAMS are generated by through the fact that to set up a surveillance procedure in many cases you have to go into a half SCRAM condition, and then somebody in restoring that misperforms and trips the unit. Are you doing anything in your training program to minimize this propensity?

MR. LESTER: I believe we recognize that fact. Our intent is to have our I&C Technicians trained, probably not as nearly as in detail as an operator, but in the system performance itself, so that at least when they are calibrating an instrument they will know the effect of that instrument on the operation of the plant.

I'm not going to say every technician will receive that kind of training, but obviously it's to our benefit to reduce outages, and to the extent that we train our people for that purpose we'll do so.

MR. RAY: But you recognize this vulnerability and --

MR. LESTER: Yes, sir.

MR. RAY: -- you are addressing it?

MR. LESTER: Yes, sir.

Dr. Sabri may mention that, also, in her training development work.

MR. BENDER: Where in that list up there are is the responsibility for the technical records assigned, and things like the condition of the pressure vessel, the history of the steam generator tubes, things of that sort, that you have to maintain surveillance over?

MR. LESTER: Records as a retention matter are a part of the administrative services group, has an administrative services manager that reports directly to Lee Maurin, from a maintenance record point of view.

MR. BENDER: Are any of those in that list of functions up there, or is that somewhere else?

MR. LESTER: Well, these are the generators of the records, and the users. They don't maintain them. The maintenance people, obviously, when they do a calibration check it goes into the records.

MR. BENDER: Yes. I guess I'm somewhat conscious now of the -- who is looking at those records to be sure you've got everything you need, and that they represent the plant, and things of that sort, and there is a place where -- there's a repository, but the repository is just that, it's a repository, and somebody has to be conscious of whether you've got everything, whether it's in the right form or not, things of that sort, that have

been troublesome in the past.

MR. LESTER: I have to say, gathering up the records that go into that repository is no small task. We identified that quite a while ago. I won't say that we are 100 percent there. In fact, I think we have some work to do in that respect. We have recently assigned that responsibility to the Nuclear Project Support Group to lead, but there are elements throughout the project that get involved, including construction. Ebasco design, our own maintenance and startup efforts.

MR. ZUDANS: Wouldn't that normally be a QA or QC function?

MR. LESTER: What is "normally," Dr. Zudans. There's a lot of technical information that has to go into it.

MR. ZUDANS: I know that.

MR. LESTER: Certainly there's Quality Assurance aspects. Such mundane things as humidity control, temperature control, and the records storage vault, and so a lot of people get involved in it. It's a difficult thing to get together.

MR. WARD: Okay. We had better move along, Dave.

MR. LESTER: We recently, as Lee indicated, completed our cold hydrostatic test. Cold hydrostatic

test was really, in my opinion, the first opportunity we had to bring every element of the project together and try to work it as a team. I think we carried out cold hydro in an excellent fashion. We did it ahead of time on our current schedule, but we also recognize some deficiencies having had that experience behind us in the participation of LP&L personnel in the startup program.

As a result of that we have now developed a planning book for purposes of assuring ourselves that when we come to hot functional test, pre-cold/hot functional tests that departments will be prepared to make better use of that in gaining experience on the plant.

I don't intend to go through that slide entirely, but I'd like to make a few points. First of all, here's the book (indicating) I have a copy of it here. The book was developed under the cognizance of that individual who fills that now solid block of integrated test director. The reason for that is that much of the hot functional testing that will -- pre-cold/hot functional testing that will occur between mid March and the end of February will occur again post fuel load. We repeat many of those tests. So since he is responsible for the test after fule load and he is most knowledgeable of these integrated test procedures we had him coordinate putting this plan together. And it's based on the actual startup

hot functional schedule. We have in here a 24-hour coverage by plant management, including myself, and then each department has its own plans for personnel participation, for communciations, and for their own equipment checkout, equipment and procedure checkout.

So we have identified in relative detail how we plan to participate in pre-cold/hot functional tests. I think the book is relatively new, and it will certainly be refined between now and the middle of January, but already I believe it is pretty advanced.

Beyond that we have the beginnings, and I have a copy of it here. It's really a preliminary draft of a power extension manual for the plant to use during post fuel load testing, again to gain as much experience practicable during that period for permanent LP&L employees.

MR. ZUDANS: Now, this participation book is essentially a companion to the complete test plan?

MR. LESTER: It's separate and distinct from the test plan, but it uses the test plan as its basis.

For example, if we are going to do an, bore an addition test during pre-cold/hot functional tests, which we will, then the chemists will take full advantage of doing the sampling and learning the sampling techniques for boron. The operator should get some feel

for maybe some thumb rules on time of boration in order to gain a few parts per million boron, or whatever they can develop some thumb rules for the plant specific condition.

Some of the departments have included matrices, for example, which include on one column the names of their technicians or people, and along the top the specific procedures that they desire to be practiced during pre-cold/hot functional tests.

The fact that we are getting participation does not by any means eleminate the need for contract services, as you well know. And just to indicate how we are equipped to gain contract services, I have included this slide in the package. Those contracts are all in place with the exception of the last word at the margin, and we expect to put out requests for bids this month for a maintenance contract.

MR. BENDER: I'd like to get a little feel on what the maintenance contract provides to you.

MR. LESTER: Okay. We expect there will be a significant number of manhours devoted to modifications, retrofits, and early-life problems with the plant, just as other plants have experienced.

In addition to that, it may be to management advantage to actually assume some completion of construction work in the plant staff, because I think we

may be better equipped to complete some of these final touches on systems. For that purpose we want to get a single contractor in here who is capable of working nuclear plants, with all of the health physics and security problems associated with it, and can provide the supervision for the local craft to complete this work.

MR. BENDER: I take it there are organizations out there that are willing and able to provide these services and have the qualified people on hand?

MR. LESTER: Can't keep them away. Yes, sir. They are ready, willing, and able to do that.

MR. ZUDANS: Could you briefly indicate what each of these, say, consulting groups --

MR. LESTER: I meant to do that before, Dr. Zudans. Let me recall for you our philosophy regarding contract personnel. Where it is possible to get a contracting company to do a well scoped piece of work, we might give that piece of work to the contractor. Where it is necessary for us to gain expertise to supplement staff we are much more interested in individual resumes. All right. So if I were to go down and say "What contractor is doing what?" it would be inappropriate except for maybe a few of the areas. For example, general physics is doing some work for us in the area of fire protection strategies. Quadrex is helping Dr. Sabri quite a bit in the development

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of some specific well-scoped training program. On the other hand, we have people from TERA Corporation who are dispersed into the staff for that particular personal expertise, and others, as well.

MR. PEARSON: What happened to Lockheed?

MR. LESTER: They --

MR. PEARSON: Weren't they helping you with your control room design in this way?

MR. LESTER: I'm going to have to let Dr. Sabri discuss that when she comes up.

And to give you an idea of how we anticipate the use of contractors to grow from here on out, this slide was prepared. Actually the heading should read "At Fuel Load" and "At Commercial Operation," not "Through." Again, as Lee Maurin pointed out, you know, it's our desire, just as it would be the desire of any smart management to gain as much experience for our permanent personnel as possible, and have them do as much as possible. There's just so much work that it's impossible to do, you know, do it without a lot of contract people, I should say.

If there are no further questions, I --

MR. WARD: Let's see. If we go to the question of the 23 people in the startup organization, --

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MR. LESTER: Yes.

MR. WARD: -- so they work with 172 here.

MR. LESTER: You see, that's supplemented now by 172 contract folks, many of which have several startups under their belts, and that's true for any of the departments. As you can see, the maintenance craft is a relatively large group. On the other hand, health physics is a realively small group, and those three people are doing some very specialized developmental work on dosimetry and so forth.

MR. ZUDANS: Quality Assurance, why is that so small in terms of contractors? Do you have all of your own staff to take care of --

MR. LESTER: We have, I don't remember the number. I think it might be in one of the earlier slides in Tom Garrett's group, a relatively large number of Quality Assurance personnel, but Tom now is in the process of trying to hire additional contractors.

MR. ZUDANS: Because if you -- Say a contractor is doing the construction work within the plant, who then is the Quality Assurance for that work, the contractor himself?

MR. LESTER: The contractors provide Quality Control. Ebasco services provides a level of Quality Assurance, and then we have a level above that. So there's

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a lot more quality assurance people on site than just the LP&L Quality Assurance people.

MR. ZUDANS: They are just not identified in these sections.

MR. LESTER: They are not identified in this section. This does not identify any of the construction craft. I should have said that. If I left you with that impression, I didn't mean to. This is supplements to the LP&L staff, plant staff, nuclear operations department.

MR. ZUDANS: Oh, okay.

MR. LESTER: It does not include construction at all.

MR. WARD: Any other questions for Mr. Lester?

(No response.)

MR. WARD: Okay. Thank you. Let's go ahead with the discussion of training then, please.

MRS. SABRI: My name is Zena Sabri, and I'm the Director for nuclear training with Louisiana Power & Light.

Last March we briefed you on the objectives of the training program. I'll be briefing you today on progress ultimately meeting these objectives. I'll be briefing you on the status of training of personnel, and I'll be stressing particularly the licensed operator program status. We will be ready to discuss in

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detail the status of other non-licensed operator training programs. Mr. Charlie Toth, Training Manager for implementation can address this to you, if you want to go into detail in non-licensed operator training program.

You remember back in March we said that one of the key objectives that we had in this training program, is to make sure that feedback from industry-related experience is fed back in a timely manner, in a sensitized piece of information to all personnel training. I'll be briefing you on how we are doing it for all personnel, but with more emphasis on licensed operator training, and I'll be discussing the simulator we have committed to have our specific simulator. I'll be discussing the characteristics of this simulator.

And, meanwhile, Mr. Toth will be briefing you on how we are making sure that the simulator training that we have now in combustion engineering, which their simulator does not really represent the plant that we have. How we are feeding back plant specific information to compensate for that, you know, lack of fatality between the combustion engineering simulator and between our plant specific information.

Again, I'll be addressing the characteristics of the future simulator. Mr. Toth will be addressing how we are feeding industry-related events in

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the current simulator, including using the compact simulator that we have rented and is available now onsite.

And the last one is easy to answer, whether there will be an SPDS system? Yes.

These are some of the objectives that we discussed with you back in March, and to make sure that we have on a continuous basis sufficient number of trained operator, and by this Professor Catton we do not mean operators that can pass the license exam. We mean operators that really know the plant, and one of the criteria is to make sure that everyone of these operator can take a recent event and tell us what does this recent event mean to this particular plant.

When we go back to the plant we show you how we are accomplishing this. We have a half scale model of the plant containment that has every pump and valve in the plant on it. I expect every operator to be able to show where is every valve is in this, you know, containment model, and also to tell us, and that's during their exam, their oral exams, to tell us what does it mean to have this valve closed in a combination with couple of pumps in another system? If they are able to do that, then they meet the requirement for being recommended to an NRC exam. And for sure if they meet that requirement they will pass any rational, reasonable NRC exam, which that's

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a different question. Okay.

MR. CATTON: I think my concern was more the reasonableness of the NRC exam, and I was hoping that you wouldn't devote too much effort to passing it.

MRS. SABRI: No, sir, we are not. That's just --

MR. CATTON: I would like to see your course outline for them out there this afternoon, if possible.

MRS. SABRI: We'll be happy to do that.

We have 24 prospective candidates for the hot license class, and as Mr. Maurin discussed that's, you know, we really have quite a few people to make sure that we have enough personnel for the -- to be licensed operators.

Now, in terms of feedback from operating experience, we do have one contractor on site who is seeking every system description, whether it's integral system description or balance of plant system description. This organization have analyzed all past operation experience, you know, of the LER type, extracted from it the human related or human initiated events, and what we are having them to do is, for example, when you talk about the HIPSI system, we have a section that goes after the system description for HIPSI system, whereby they tell them, say there was, say, an operator error that

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happened to this type of a pump, they make sure the error was so this happened in 15 other plants and it led to so, so they not only take the synthesis of all past operation experience, but they make it plant specific, and we'll be happy to show you this, also, at the plant.

MR. CATTON: What about things like operating characteristics of the HIPSI pump? I mean does the operator know how much water he can get in as a function of the pressure of the system? Does he know these kinds of things?

MRS. SABRI: Yes. That's part of the system description, yes.

MR. CATTON: So he knows the head curve and so forth?

MRS. SABRI: Right.

MR. WARD: You say the organization that is making this analysis of LER, you said there's an organization at the plant. Is that part of the training organization?

MRS. SABRI: That's part of the contracted services, sir, under Don Luther's organization. Part of his program is program, update of program development, and this is also what is unique about the organization, and that's one of the reason for the 55 people that we have.

MR.WARD: This is under the training program development --

MRS. SABRI: Yes.

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MR. WARD: -- part of your outfit, but it's done by the contractor.

MRS. SABRI: It's done by contractors, yes.

MR. WARD: Okay. I understand.

MR. ZUDANS: And, Dr. Sabri, did you say that you have the operating experience analyzed in this fashion for every system in the plant?

MRS. SABRI: The way we are approaching it is that they have analyzed there's something like 160 manyear of experience in operating, all past operation experience. Okay. They take their data bank and then extract from it for example all events there is to the HIPSI system, if this is the system that you are interested in.

MR. ZUDANS: Yeah, I understood what you do. I just wanted to know whether you applied this concept to all important systems.

MRS. SABRI: All safety related systems, and all systems, again, one or the other approaches, particularly the HIPSI system, we have done a PRA work for it, so all event sequences that are high frequency -- there is a high frequency use of this system, and also can have a high probability in the high risk value associated with its failure, those are the ones that we are trying to stress at this first phase of operation, this first phase of development. Not for every system.

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MR. ZUDANS: It's a very interesting way of factoring the actual experience into this. It's really interesting.

MR. CATTON: Do you do this with things like, say, the service water system, and the secondary side, as well?

MRS. SABRI: Okay. We are doing it now for the ox -- I can show you some of the results from the ox feed system, because we have done both a PRA and data analysis on it, and the HIPSI system, whereby you can really -- you notice we said here we are going to be emphasizing areas most contributing risk, and that's how we are approaching it, risk meaning the frequency kind of sequences, and we are trying to address both.

MR. CATTON: Who is your contractor?

MRS. SABRI: TII.

Any other questions there?

(No response.)

MRS. SABRI: Another feature there is the --

MR. CATTON: Who is TII?

MRS. SABRI: Technology International Incorporated.

MR. CATTON: Where are they?

MR. PEARSON: I think they are at Palo Alto.

MR. BENDER: California.

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MRS. SABRI: The other factor thereto is, for example, we do have onsite the past manager of NPRGS. He is, again, part of the organization -- a contractor reporting to Mr. Don Lowe, who is setting up the NPRGS system, and developing a statistical system by which we can extract, you know, since the LER only address certain aspect. NPRGS covers more than LERs. So he is developing a system by which we can extract from NPRGS things that relates to trends, and this will cover not only licensed operator, but all other personnel.

So, you see, we are really very sensitive to make sure that past operation experience is fed back into training program.

Okay. During the, for example, hot functional we try to emphasize the interfaces between operators and between other plant personnel, like when does operator need the HP? When does he need the maintenance staff? When does he need the chemistry staff?

MR.CATTON: Is there one of your people on PORC? That is the --

MRS. SABRI: Yes, sir. Mr. Redonda, who is the training development, manager of training development, he is on PORC, and I am on the systems review committee.

Now, with cold license program, you know, there are very specific elements that are set for us

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by the regulatory requirement that need to be met. So when I was talking about both short term and long term objectives, one of our key objectives now is to follow very, very closely the cold license program progress. Okay. I do agree with Eric, with Mr. Johnson, that we do not have that much time. We are aware of that. There is no fact left in the time that we have, so the way we are structuring and the way we are managing the program now, we do realize that there is a challenge ahead of us, whether it is for licensed program, operator program, or other personnel program, but I have every confidence that we will be able to have every individual appropriately trained before fuel loads, which is the date that we are shooting for, and I believe that --

MR. CATTON: Are you going to comment on the 60-hour week?

MRS. SABRI: Yes, sir. Okay. Your concern there was whether we are going to be asking everyone to be there for 60 hours a week. No, we are not. The 12 hour -- See, there is a 10-hour mandatory, whereby they take six hours, for example, if there is a classroom they take six hours in it, and there is many of them four hours, whereby they work the system in the plant. We did have, as Mr. Maurin mentioned, we did develop -- and that was done following the NRC visits, they did point to us something

that, you know, we agree with them that we need to really follow more closely, and have a much more rigid control in progress for every individual. So we did develop a matrix by the name of every individual, the name of every system that he has to finish by the qual card. Okay.

We follow this on a weekly basis, what every individual in the class have to finish a certain number of systems. Now, if he does not finish the number of systems that he has to finish, then in this case, you know, he is required to spend 12 hours to finish it. So far there have not been any, the way the progress is, and it does not seem there is going to be any whereby we ask them to have to spend the 12 hours.

MR. CATTON: I guess I'm confused. I thought earlier we were told that people who were in training were spending a 60-hour week. Now --

MRS. SABRI: They are authorized --

MR. CATTON: -- from what you have said it's a 50-hour week?

MRS. SABRI: They are authorized to spend, and we are willing to pay overtime up to 12 hours per day, so that's 60 hours per week.

MR. CATTON: What is the average day for one of the trainees?

MRS. SABRI: It's about 10 hours per day.

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MR. CATTON: Three?

MRS. SABRI: Ten hours per day.

MR. CATTON: Ten.

MRS. SABRI: And, again, you know, it's, they realize and we realize that we have a limited time, and --

MR. CATTON: And how long will this 50 hours per week go on?

MRS. SABRI: Until the systems are walked through, every procedure is as it applies to a system is verified as far as the system is concerned, until they really, you know, know the physical plant. There is no easy way to know the physical plant, and we feel that at this stage where the plant have, you know, is really in a final stage where there really isn't that many with implications, this is the best time to do these walk throughs.

MR. CATTON: I understand, but I'm still having a little bit of trouble getting the measure of this. Is it for six months, three months, or what? How long is it going to take this person to do these things at the rate of 50 hours a week?

MRS. SABRI: Well, for the qual cards, the total time -- I can answer that later. For the qual cards we estimate it takes something like 400 hours total to finish all system qual cards.

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MR. CATTON: Okay. Now, that's in excess of their eight hours per day.

MRS. SABRI: Well, the eight hours per day, you know, the operators are now relieved from every duty except training. They are returned on the shift during hot functional, and there they are carrying both their work -- it's on-the-job training, and there they also get a training as far as integrated plant response. They will be finishing the four-month classroom and transient analysis on November 18th. So from November 20th they'll be on shift until they pass their review period. And when they are on shift, again, they are finishing the system qual cards.

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MR. CATTON: Maybe you can explain this to me later, because right now I'm going to give up.

MS. SABRI; Okay.

Maybe the next slide will explain that.

(Slide)

As part of the -- to assure ourselves of any area of weakness or any area that needs more emphasis, is addressed for the whole group or for individuals in the group.

We do have Mr. Jerry Holman, who has been conducting license operator exams ever since there was one, come in and give an independent evaluation of the progress of the licensee candidates.

These are the statements that are made by Mr. Holman in his reports in August. Remember, in August, that was not intended to be an NRC-type exam. We did not expect at that time to have any of the licensees pass an NRC-type exam because there were certain areas that we knew we had not covered yet.

These areas were procedures and the rest of the knowledge of the technical plant. Some of the procedures were still being finalized.

If you look at the individual and the groups score, all of the areas that had been covered in training, the majority of the class did pass it on the SRO and RO level.

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The only two areas where you do find that the operators do not meet the passing criteria are procedures and we do realize that and we have a plan of handling it, and we have some weaknesses both administrative and normal operating procedure, so we do have a plan, as I'll show you in the rest of the training program, to make sure that these areas of deficiencies are addressed.

Knowledge of the physical plant, procedures and, again, our involvement.

I think Mr. Lester addressed this in his presentation.

So the knowledge of the physical plant and the procedures, we have no a system of qual cards, whereby every licensed candidate has to walk every system in the plant, know where every valve and every pump is and the procedures that goes with this system.

As Mr. Maurin said, we are following this on a weekly basis.

So rigid supervision will be followed between now and the time they finish the qual cards.

MR. ZUDANS: Could you qualify that? I thought previously you mentioned that qualification cards only were used for non-operators.

MS. SABRI: We are using them now for both non-licensed and licensed operators.

MR. ZUDANS: All right.

MS. SABRI: The licensed operator, we did give them the qual cards before. We assumed that they know that they have to turn these qual cards.

They were undergoing quite a bit of other training, so, you know, there was a lack of following up on them to make sure they had turned in these qual cards in a timely manner.

MR. ZUDANS: Now, how does this aspect work, the qualification cards? Could you give an illustration?

MS. SABRI: Of the qualification cards?

MR. ZUDANS: Yes. How is this done?

MS. SABRI: For example, I can show you this one. Look at the slide.

(Slide)

And tell him the objectives. For example, he is supposed to know so and so and so about the system. He is supposed to review this operating procedure in this system. He is supposed to be -- and it's very specific -- system interfaces. Like, for example, if you have one system affecting another, he has to review that.

And he has to review a particular chapter in the FSAR that relates to that system .

After he has done that, then there is group of system experts -- one of them is in training, one of them

is in the start-up, one of them is in operations and that system expert is supposed to examine this individual to make sure that he has done all that and he signs off.

MR. ZUDANS: And what is it? He has a specific physical card that the results of this are marked?

MS. SABRI: Yes.

MR. ZUDANS: And he has to go through this for a given system several times?

MS. SABRI: System by system until he feels comfortable and there is also the oral exam and the system expert probing into his knowledge.

MR. ZUDANS: Okay, and if he did well on the first test, that's the end of that qualification card?

MS. SABRI: Well, that's right. That's the end of that qualification card, but we still have a three-phase oral examination, by which we make sure that he didn't forget something. You know, we keep on covering all that has been covered after the training program.

MR. ZUDANS: I see.

I like the qualification card concept because I understood it could be periodically repeated, regardless of whether they passed or not.

MS. SABRI: Yes.

MR. ZUDANS: But now you say it's done, it's done.

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MS. SABRI: It's done when we have assured ourselves --

MR. ZUDANS: Oh.

MS. SABRI: Yes, that he has --

MR. ZUDANS: So he may have to go through several cycles on the same system --

MS. SABRI: Until he gets it right.

MR. ZUDANS: -- until you, as trainers, are satisified that he knows the system?

MS. SABRI: Yes.

MR. BENDER: And do you use such a procedure in your requalifications?

MS. SABRI: The requalification is a part of the requal cards and, also, there is an additional thing we have to know, like in a plant modification,they have to know --

MR. BENDER: I understand that but I'm referring to the quali -- the operator learns the systems by your qualification card method and I think it's a very good one but do you have a continuing program that's similar, so that you make sure he doesn't lose the pieces later on?

MS. SABRI: Yes. We have a very well-developed requal program. It has quite a bit of the elements of the qual program.

MR. BENDER: Does that answer your question?

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MR. ZUDANS: Yes, it does.

MR. RAY: Who monitors the status of the control card to make sure that the student is doing what he should be doing on a progressive basis?

MS.SABRI: We have a group of the training staff, the NOS's and the training staff are supposed to be jointly assuring that every individual is finishing the system which he is supposed to finish in that week. So, in a sense, the NOS's are carrying their -- you know, their regular responsibility of supervising their operating trainees and the training is also very closely working with the NOS's to make sure that nothing falls in the crack.

MR. RAY: What you're saying is, there are weekly objectives. He can't just let it go and follow a casual schedule to suit him.

MS. SABRI: Yes. System by system and I'll be happy to show you this when I get to that point.

System by system, individual by individual.

MR. WARD: I think we need to pick up the pace a little bit here, if you can.

MS. SABRI: These are the programs that are already complete for the cold license program. During the part of the balance of plan and the integralness, there was some system walk-throughs. Those are the only elements of

the training program that are not yet complete. The accident transient analysis and, as you see, they are to be completed very soon and reactor theory, we've got the simulator because the operators, historically, have had difficulty in understanding reactor physics.

So we got the compact simulator and it is modified to plant parameters and system qual cards, they are due to be finished by that one.

MR. WARD: So, the compact simulator is just an interactive CRT or something? Is that it?

MS. SABRI: It is a compact simulator with a plant model.

MR. ZUDANS: That's the one where you mentioned he has to walk by and show the valve and explain what that valve is and that's the one that --

MR. WARD: No, no, no.

MS. SABRI: That is a mock-up of the plant. Next to it is a compact simulator that tells you, for example, if you add boron, this is how the nuclear flux will look like.

MR. WARD: Atari.

MS. SABRI: And during the intensive review period, any area of deficiency that are picked for an individual or for a whole group, will be picked and will be covered pretty thoroughly.

We do plan to send them for the NRC exam; those that are selected from them will be sent to NRC exam in the first part of April.

Now, to address how we are organized, both to make sure we cover operating experience now and later on, okay, these functions are carried under Don Lowe's organization and the status of the simulator and what is to be covered on Waterford's specific simulator, is under Mr. Dan Packer's organization.

Those are all permanent LP&L individuals.

Mr. Toth will be discussing the status of current simulator training.

Here in the program development there are elements to make sure that descriptions and materials are being used for training and all of this is kept updated and one of the key elements in updating it is industry-related experience.

The way the program is developed, this is for all plant personnel, is through use of test analysis and I understand this is something we have committed to in the FSAR.

We have not done that for every plant position yet because we are working very closely with INPO to make sure we can keep things as they occur.

We don't want to forget the effort and expend

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the same amount of funds.

You notice here, under this part of the organization,human engineering discrepancy committe, which was involved in control room design review and meeting all the Sec. 811 requirements, this is a permanent part of the organization, whereby any plant modification that is to take place is to be looked into from its probability ease of training on it, adequate procedure on it.

So, these are some of the things that are really --

MR. PEARSON: What kind of people make up that committee?

MS. SABRI: Lockheed. Westinghouse. Combustion Engineering. The plant superintendent, operations superintendent.

MR. PEARSON: So, a number of consultants.

MS. SABRI: Consultants and quite a few LP&L individuals. Myself, Don Lowe, Buck Peters, two of his operators. Staff from Dave Lester's organization.

MR. BENDER: How often does that group meet?

MS. SABRI: When we were trying to finish the control room design review, is was too often.

MR. PEARSON: Is there a periodic schedule for that meeting?

MS. SABRI: There is a plan to be a periodic

schedule, like maybe once a month or once every one and a half months but, if there something -- where there is a plant change that we know of, then there has to be a special meeting.

MR. PEARSON: I see.

Thank you.

MR. CATTON: Does this group look into both operations in the control room and the maintenance?

MS. SABRI: And maintenance.

As a matter of fact, Mr. Don Lowe will be talking about that.

MR. CATTON: If it turns out that this committee decides that, gee, maybe it ought to be done a different way or we should do something and there's a disagreement, what is the path to resolution?

MS. SABRI: Negotiating is a factor.

MR. CATTON: With whom.

MS. SABRI: For example, this is one of the things that we had on waste reduction --

MR. CATTON: I understand and I think this is a very important committee, providing it has some kind of strength in the organization.

MS. SABRI: Well, I am a member of this organization and --

MR. ZUDANS: Who chairs it?

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MS. SABRI: Well, currently, Mr. Don Lowe chairs that committee. You know, the permanent one. We have not decided yet who will be the chairman of the permanent one.

For example, if there is a plant retrospect that you can fix by procedure or by training, we will be addres ng this and we will be discussing this with the plant m nager, with the project support manager, myself and with Mr. Maurin, so that we can look at our options.

MR. ZUDANS: And are you saying that you would not have a rule change but you would have a significant negotiating position to change it, so that it fits with the requirements of human engineering?

MS. SABRI: Yes.

It's not a matter of only approving the change. It's a matter of making sure that when we have a change and we decided that this is the best way to go, that human factor engineering concerns, maintainability, testing, surveillance, procedure that goes with it, are addressed in a timely manner whereby we don't, you know --

MR. ZUDANS: I guess I'm not quite convinced that you answered -- I said, if you disagree, if this HED disagrees, human engineering discrepancies group, disagrees with the change, can it be implemented?

MS. SABRI: Well, it has to be refuted with --

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MR. ZUDANS: Well, you're refusing to answer my questions.

MS. SABRI: Well, if it's obviously the wrong kind of change --

MR. ZUDANS: Not obviously. Obvious only to this group.

MR. CATTON: I'll give you an example.

There is a pump that has a valave that is important, it's in the back -- he wants me to be quiet -- on the backside of an apparatus where you can't see it. And it has been overlooked on a number of occasions.

That would come up in a committee like this. Would you tell them to change it and would they?

MS.SABRI: I'll have to make a good case why it has to be changed, based on that operation, based on our plans and I'll have to look into when is the right time to change it.

Maybe the first refueling; the second refueling.

MR. WARD: Yeah, I think, you know, the management runs the place and this committee will make recommendations to management, I'm sure.

MS. SABRI: When something -- you see, this committee is made up of both engineers and human factor psychology.

MR. CATTON: Yes, but that's why I was asking

the question.

What is the change of command to the guy who makes the decision? I really can't see it.

MS. SABRI: Okay.

We'll make the decision right now.

Now, as far as programs, we have developed training programs for every item on this training implementation, and Charlie Toth will be happy to discuss the schedule for finishing the required training before fuel load.

As far as the simulator, the management and the running of the simulator comes under Dan Packer's organization and here a simulator is planned to be used for every individual, for every discipline in the plant. Not only for licensed operators. For engineers, for maintenance staff, for health physics staff.

Another key feature that we use the simulator for is to do procedure relegation and verification and also to test any plant retrospect before it is done, so that might also explain why we need the fifty-five individuals.

As a matter of fact, I feel we are understaffed with fifty-five individuals.

MR. WARD: What is the schedule for your simulator?

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Okay, you've got that on your next chart.

MS. SABRI: Yes.

Originally, we reviewed all the bids for the simulator. We expect to award the contract by the end of this year.

We are writing up the brief, the plant exhibit, the company figures as to our recommendation to the company for the independent award to the contractor.

It is supposed to be ready for training by mid-'85 and the criteria that we use for what goes on in the simulator, these are the preliminary lists of the simulator malfunctions.

The criteria that we used that it not only includes the requirements of 3.5 ANSI but also we have looked into some of the work that was done for NRC by Oak Ridge National Lab, whereby they have identified events that happened very frequently but are not simulated or carried on a simulator.

We have to got make sure that this is not the case here. Events that happen frequently will, though they might not be much safety related, but they might be of concern as far as plant reliability are simulated on the simulator.

When we get back to the plant, I'll be happy to show you the details of this.

MR. CATTON: Do you have requirements for fidelity?

MS. SABRI: Yes.

MR. CATTON: On reproduction?

MS. SABRI: Yes.

As a matter of fact, that was one of the criteria for use for evaluation.

Now, Mr. Charlie Toth will be discussing with you how current simulator training is taking place.

# # #

MR. TOTH: Good morning. My name is Charles Toth. I am the Training Implementation Manager at Waterford, and I'd like to make a presentation this morning on the status of current simulator training.

The simulator training right now we have conducted for our cold license candidates on the combustion engineering simulator Windsor. The simulator at Windsor is somewhat different than our actual plant, and we also face the problem that very few of our cold license candidates have any commercial operating experience.

To address that problem we had every candidate attend the simulator for 8 weeks if they had no commercial operating experience, as a minimum. Some of those fellows have attended simulator training a couple of years ago and we sent them back for recertification at this time.

Any people with previous operating experience attended the simulator for a minimum of three weeks. At the end of those training periods a reactor startup certification exam was administered and reactor physics, and you post your criticality, maintaining safety reactor was measured and evaluated by the combustion engineering staff.

Also, to make the training as relevant as possible to Waterford III we used our own

operating and emergency procedures to the maximum extent possible. During the conduct of an exercise we followed our procedures very closely, where the simulator model would not hold together using our procedures the simulator was put in hold, we walked through the specific steps in our procedures, re-energized the machine to continue the exercise.

MR. WARD: The third --

In the third item there, the certification test given at the end of the program, do you see any difference in the performance on the exame of the people who had previous commercial experience and the people without it?

MR. TOTH: As far as completing the startup, it was a little easier for them. What is demonstrated by that startup certification is the ability to approach criticality in a safe manner, monitoring the proper parameters --

MR. WARD: Okay. So this isn't actually an exam that you have a quantitative grade on?

MR. TOTH: No. It's a pass/fail sort of exam.

MR. WARD: All right. Thank you.

MR. TOTH: Okay. The accidents that had normal occurrences that were included in the simulator

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training at Windsor were a typical list of accidents you would expect to see; main steamline breaks both inside and outside the reactor building, LOCAs of various sizes, steam generator tube leaks, loss of main feedwater, both partials and full, loss of component cooling to the reactor building, typical reactivity addition accidents, both the positive type and negative type. Natural circulations established after a trip, and also natural circulation cool down.

We also conducted a station black-out when in natural circulation from there. And also saw a demonstration on the ATWS.

Now, to insure that the simulator training did not put any wrong ideas into our candidates' minds during the reactor theory course we emphasized the operating characteristic differences between that model plant and our own plant. Also during the transient accident analysis training session, which is currently in progress, we were emphasizing the plant response differences.

The control room indication and control differences in locations are identified during qual-guide completion and our in-house three-phase oral exam program. And also we emphasize these concepts on a compact simulator, and we conduct procedural walkdowns on

a control room half-scale model.

MR. BENDER: I wanted to ask about the previous slide. Don't put it back on, but is there some kind of written description of how these things are covered?

MR. TOTH: A list of casualties?

MR. BENDER: No, not the casualties. In the previous slide you had a list of accidents and abnormal occurrences, and I just wondered whether there was some written description of how they are treated by the simulator?

MR. TOTH: Yes, sir. We do have that.

MR. BENDER: Thank you. We may want to take a look at it out there at the plant.

MR. ZUDANS: And the other questions refers to the same area like that. From what I understand there is a simulator that has some substantial difference. Okay. And how is it that you perceive it possible to go count down with these operators who have never done any simulation on something that resembles the Waterford III?

MR. TOTH: The rod control system is very similar. The plant protection system is quite similar.

MR. ZUDANS: I asked the differences, not the similarities.

MR. TOTH: Well, saying is the startup

certification exam that was done, really, was the startup certification was not administered any anything very significant. They can safely start up the reactor.

MR. ZUDANS: Well, you also mentioned the simulator --

MR. TOTH: Now, the control board differences --

MR. ZUDANS: Wait a minute. You also said that the simulator would be run for these training purposes, and that where the response of the simulator would differ from Waterford you would stop the simulator and do certain procedures. That kind of broken up training, how could --

MR. SIESS: On transients --

MR. ZUDANS: Well, on transients, yes.

MR. TOTH: We didn't necessarily stop the transient. Normally, the --

MR. ZUDANS: Stopped the simulator.

MR. TOTH: -- simulator training displays an event that's in progress. The operator must identify and apply the appropriate emergency procedures. In the transients where our procedures would invalidate the transient, we wait until after the transient is completed to walk down our procedure. If there was a point in a slow transient where we could stop the machine and point out procedural differences at Waterford III at this point we would check these indications, make sure that these

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systems are operating, which is deviation from maybe the simulator model. Then restart the transient.

On the large type casualty, steam line breaks, things like that, you don't have time to respond to procedures during the transient. You have to know your immediate actions by memory for the operators, and they do respond to the immediate actions. The ones that they could not conduct in the simulator they did verbally say they would have conducted at such and such panel. At that point then the supplementary actions, which are rather significant differences are in the procedures --

MR. ZUDANS: No. What it really works out to be is the simulator is not exactly Waterford III. There are some differences. The training procedure I assume therefore is not a continuous process but is associated with some interruptions during the test. And what I am really asking is how secure or how comfortable you feel about such a training in terms of operator being able to do what he's required to do in a real power plant, or --

MR. TOTH: Well, I feel very comfortable from the fact that for the last group -- not the last group, but the last series of simulator training sessions, a training representative was present at the simulator, as well as the experienced trainers at CE. Our training representatives were all previously licensed SROs, and most

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of them on combustion engineering plants, and they are familiar with the Waterford operation, and they did an evaluation of the candidates above and beyond the evaluation that was done by the combustion instructors. All the instructors wrote trip reports. The candidates write trip reports, also, on how valuable the training was to them. And it's that type of feedback that we integrated back into the training program to explain the differences in the characteristics in the transient responses, both in the reactor theory and the transient accident analysis training programs.

MR. BENDER: Excuse me. Again, thinking of Palo Verde, which was one of the first simulators of CE plants to represent the more modern design, have you given any thought to trying to get access to that simulator?

MR. TOTH: We opened negotiations with them. They are at the point right now where they are deciding whether to use a vendor to sell back time, how much. They have some contractural commitments to Southern California Edison, which may get in the way. We are keeping our finger on the pulse, trying to get some time at Palo Verde, the simulator, because it is more closely modeling the Waterford plant.

MR. BENDER: I think it would obviate some of

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Dr. Zudans' concerns if you able to do that.

MR. TOTH: As I said in earlier slides, we also do try and show proper Waterford response on a compact simulator. We have had that compact simulator data base modified to reflect the actual Waterford core characteristics and plant characteristics to the maximum event possible, and the soliciting of the typical accidents we can run on that. Again, they are your pretty standard list of accidents. Loss of feedwater. You can take that all the way to steam generator dry out, variable steam breaks, tube ruptures, natural surf cool down. A small hard spot is the LOCA. It can only be a minor LOCA. We can do a complete major load rejection, various equipment failures, normal start of shutdowns, and plant maneuvering. And we can also model various stages of core life.

MR. BENDER: Where would depressurization fit in that list of items?

MR. TOTH: We can run it through the minor LOCA through the CVCS flight, having the computer not allow the operator to isolate, but we can run a depressurization at that point.

MR. BENDER: No, I think that's not the one I'm thinking of.

MR. WARD: Are you thinking of secondary side?

MR. BENDER: I'm thinking of secondary side

depressurization, where you use --

MR. CATTON: The maximum steam break.

MR. BENDER: No, I'm not thinking of that one, either. I'm thinking about the circumstance where something requires you to depressurize and you do it by pumping water into the sprays in the pressurizer. Is that simulated --

MR. TOTH: That's beyond the capabilities of this machine.

MR. BENDER: Beyond the capabilities?

MR. TOTH: Yes.

MR. BENDER: How do you deal with it in the program?

MR. TOTH: That was conducted at the combustion simulator, when we were doing cooldown depressurization, how to line up auxiliary spray, collapse of the bubble.

MR. BENDER: I see. Okay. I forgot. That's a compact simulator. Okay. Thank you.

MR. TOTH: Okay. Our industry operating experience is fed back into the training program. The program onsite, the operator's assessment and information dissimination group; they evaluate SERs, SOERs, and LERs, and transmit those packages to the training development section under Mr. Lowe, who recommends specific training

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changes that need to be made in programs, or additions that need to be made to the programs. And, also as Dr. Sabri mentioned earlier, the LER evaluation project by TII international has a large bank of LERs and will produce supplements to all the system descriptions on safety-related systems that will summarize not only industry-related events, but how those apply specifically to Waterford III.

The last point I would like to address is how much PDSs conducted in current simulator training? A simple answer is that it is not at this point. When we contracted for simulator training and conducted simulator training SPDS was in a conceptual stage at that point because of the change in regulations. We did emphasize during our emergency procedure utilization that both the simulator and on our compact simulator the various safety parameter installed instrumentation that should be utilized. The same safety parameters, as I said, are used during compact simulator, and we will instruct during our requalification cycle when SPDS is operational we will conduct specific training in our actual SPDS and the operation of that system.

Are there any further questions?

MR. ZUDANS: Where is this compact simulator?

MR. TOTH: It's at the Waterford site right

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now.

MR. ZUDANS: Physically?

MR. TOTH: Yes.

MR. ZUDANS: We will see, huh?

MR. TOTH: Yes, sir.

MR. ZUDANS: Okay.

MR. PEARSON: Did you say whose SPDS you're --

MR. TOTH: That's the safety parameter display system.

MR. PEARSON: Whose? Who is the vendor?

MR. TOTH: I don't think that the vendor has been chosen at this time. We are going to be putting the other computer program, utilize the information on the plant computer. Mr. Drummond will address that in detail.

If there are no other questions, I will turn it over to Mr. Bud Peeler, who will talk about emergency procedures.

MR. WARD: Okay. Thank you, Mr. Toth.

MR. PEELER: Good morning. My name is Bud Peeler. I'm the Operations Superintendent at Waterford III, and my discussion this morning is going to be associated with emergency operating procedures.

Basically our emergency operating procedures that are now in use at Waterford III are event-base procedures. They have been developed, were developed

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early on by utilization of CE experience, and associated with CE workshops in developing the procedures. They were written, reviewed by the operations personnel, completely evaluated and -- actually went through several iterations.

After they were completed we had a review by the procedures with the NRC. The NRC selected a group of our procedures, and they attended Palo Verde simulator with us, and the procedures were actually walked through on the simulator. That was basically four of the emergency operating procedures that they chose to walk through.

The procedures were also walked through not only on the Palo Verde simulator with the Commission, but also were walked through in our Waterford III control room. Based on that walk through the NRC basically had accepted those emergency operating procedures, provided that the comments that we received during the walk through both at Palo Verde simulator and the walk through that was done in the control room, those comments would be incorporated into those procedures. The comments have been incorporated into the procedures. They have been revised, and they have been returned to the Commission for final acceptance at this point.

In addition to the walk through with the Commission we had several reviews of our procedures.

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We had a CE review of the NSSS vendor review is completed. In addition to the normal review that they do on emergency operating procedures we had them do a comparison of our procedures with accident and transient analysis, looking at the proper timing and proper sequencing of our procedures to make sure that they were adequate. And that has also been completed.

MR. WARD: It looks like you are coming in at sort of an awkward time here relative to the development of the so-called symptom base procedures. I mean I realize you have to go with something that's available, but do you have -- See, combustion has developed the technical guidelines for a system base procedures for your plant or for combustion plants; right?

MR. PEELER: That's correct, the generic procedures. The stages of development on that, on the bottom category down here I'm a member of the CE owner's group, the operation subcommittee of the owner's group, which has been working with CE in developing the generic guidelines, a CEN-152 document, which is in the symptom base format. We had our most recent meeting was held in September, and as a result of that meeting -- well, it was actually a joint meeting that was held with members of the Commission, the procedures test review branch, and the

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system branch, along with the operation subcommittee and members of combustion engineering. At that meeting the members of the Commission in attendance basically accepted the CEN-152 document in concept, and we are anticipating an issuance of a letter hopefully by the middle of this month from the Commission, with an acceptance in concept of the procedures with an SER issued in January. That was basically the results of the meeting that we had in September.

MR. WARD: Okay. So CEN-152 is a description of the symptom --

MR. PEELER: That's right.

MR. WARD: -- the generic symptom base procedures.

MR. PEELER: That is correct.

MR. WARD: So what are you going to do with that? When --

MR. PEELER: Okay. As I was saying we are going with the event base procedures. That's what we have.

MR. WARD: Right.

MR. PEELER: And we are doing a documentation and a walk through, and a validation of those procedures. Now, with the symptom base procedures there are several elements that really have not been in place for us to proceed with the symptom base procedures. One of those has

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been the CEN-152 document final acceptance, which we hope to have soon.

Another element of that which we do not have is SECY-82-111, and how that will impact those procedures, that is not finalized at this point. And in accordance with that SECY-82-111, we will be developing a plan, once we know what its requirements are, as to when we will develop and have our symptom base procedures in use at Waterford.

We are continuing to work on the symptom base procedures. We have copies of the CEN-152 guidelines and we are utilizing those to work toward the symptom base procedures.

MR. WARD: Okay. So you are going to start up your reactor in January of '84 with the event base procedures, and then you'd expect to have the symptom base procedures under development and substitute those for -- a year later or two years later, five years later, what would you estimate the schedule is?

MR. PEELER: Well, I really can't say a definite time. That's based a lot of what the requirements are in SECY-82-111. We certainly want to get the symptom base procedures out and in use as soon as possible. It's getting the guidelines, developing the procedures in accordance with SECY-82-11, which also includes proper

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training on those procedures before you implement them. So we've got to look at a timely implementation. We certainly want to do that as soon as we practically can.

MR. BENDER: I'd like to try to understand the relationship between the training program which is done on the CE simulator, and the verification of the event related procedures that is verified on the Waterford simulator. I'm having some trouble fitting those two kinds of activities together. If you find something peculiar in the Waterford verification procedure you would probably look to correct it, but how would you know that the training program reflected things that were uncovered in the Palo Verde simulator review?

MR. PEELER: Well, the procedures as we now have them have been walked through Palo Verde. This was back in August of 1980 or July of 1980; that's when this walk through was conducted.

MR. BENDER: 1980?

MR. PEELER: That's correct, and so they were --

MR. BENDER: So you had the benefit of those before you started the training program with the CE simulator.

MR. PEELER: Certainly there were some stages of the training --

MR. BENDER: I see.

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MR. PEELER: -- that was already in progress, and as Charlie Toth did say some of the people who went through the simulator early did go back for a recertification to get exposure to those procedures.

MR. BENDER: That would pick up the discrepancie That's what I was concerned about.

MR. PEELER: Okay.

MR. ZUDANS: I have a question: You have, at least I remember from one of the earlier meetings, an extensive diagnostic computerized system to help the operator. Now, would the diagnostic be based on symptom oriented analysis of the event?

MR. PEELER: Okay. The diagnostics that's available in the computer system is not actually built into the emergency procedures. The emergency procedures are oriented around using installed instrumentation on the plant, on the control board, and not using the computer. The computer is used as a tool and as a backup for --

MR. ZUDANS: That means there is kind of a gap, because I visualized the diagnostics to lead and indicate which procedure to follow after certain symptoms had been identified, and that will be not the case.

MR. PEELER: the diagnostics on the computer will be a backup and are a backup. We anticipate that the CEN-152 guidelines is a function-base procedure, and

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it has diagnostic steps in that procedure to be used by us.

MR. ZUDANS: And those will be in the computerized system in essence, or no?

MR. PEELER: I cannot say at this time, but they will be incorporated into the computer.

MR. ZUDANS: You see the computerized diagnostic system should have some product that's supposed to be useful to the operator. Now that product could be to tell the operator what's happening, or identify the event so that he can pick the procedure, or the computerized system could identify the procedure that he should look at, or alternative procedures.What will this system do? Will it tell the operator this is the kind of event that you are faced with, or what?

MR. PEELER: Well, if you look at the function base guidelines with the CEN-152, the symptom base guidelines --

MR. ZUDANS: When you say "function" you mean symptom?

MR. PEELER: Symptom base guidelines with the CEN-152 document, it has a diagnostics section incorporated into that. That document is oriented around, however, addressing the safety functions and maintaining the safety functions of the plant. In so doing you maintain

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the plant in a stable configuration, and you have an ample amount of time to perform diagnostics as far as to address the specific casualty that's in progress.

MR.SIESS: Is the computer safety grade?

MR. PEELER: It is not.

MR. SIESS: You don't use it then in your procedures?

MR. PEELER: That's what I'm saying, we develop the procedures using all control board instrumentation, because the computer itself is not safety grade, even though it's a highly reliable system it is not a safety grade system.

MR. ZUDANS: Maybe I was not successful in asking what I was trying to ask. What is it that the computer diagnostic system will do for the operator? Because it has to be based on symptom oriented inputs, and yet the operator is only trained with what event oriented in out, input.

MR. PEELER: Well, okay. The event procedures that we now have and that we are now utilizing, do not utilize the computer at all. It's based solely on control board instrumentation.

MR. ZUDANS: What is the computer going to -- Is the computer going to confuse the operator?

MR. SIESS: It must be ignored.

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MR. ZUDANS: Wait a minute. If the computer is there, it's reacting to some symptoms, and if the operator is trained not to pay any attention to it, so why it is there? Is going to confuse the operator, going to give him a different direction.

MR. SIESS: If it is not safety grade. it's not there.

MR. ZUDANS: It was intended to be safety grade. It's not for control --

MR. SIESS: As far as NRC is concerned in approving procedures it is not there if it's not safety grade.

MR. ZUDANS: It's a diagnostic tool. If it's there you can use it; it doesn't mean it helps you, you can use it for control. I just want to find out whether there's a conflict between the diagnostic system and plant operating procedures, whether they are in conflict with each other?

MR. CATTON: What would you do if they are?

MR. ZUDANS: And what do you do if they are?

MR. WARD: Okay. I think we may be suffering in that I don't think we have a good picture of what the diagnostic system Dr. Zudans is talking about really is, and is there some way we can -- Would it be better if we looked at it at the plant?

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MR. PEELER: I think we can show you that at the plant. I don't know if there is anyone here that's in a better position to address that, but we can show you what is available in the computer at the plant as far as mimics, what displays are available in the control room when you are on the plant tour.

MR.WARD: Would you say the plant computer that you have, that you plan to have operating at startup in January of '84 is going to have diagnostic programs in it of the sort that Dr. Zudans is thinking about?

MR. PEELER: I don't think that we can say that they are going to be there at this time. Maybe someone else can.

MR. ALPHONSO; Wayne Alphonso. At the January '84 we won't have the diagnostic capabilities like you are talking about where the system will identify a procedure. We don't feel at this time we know enough about how to do that independent system to identify exactly, have the computer identify what procedures. It's pretty risky to have a computer system decide exactly which procedure we are concerned with. It could mislead.

MR. ZUDANS: All right. I didn't mean to imply that you shall have such a system. I only asked whether you had a system like that in mind.

MR. ALPHONSO: Okay.

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MR. ZUDANS: Or whether your diagnostic system is symptom based --

MR. ALPHONSO: No. Right now we have the capability, but that's a future --

MR. ZUDANS: Okay. The next question is the logical question: Will computer diagnostic displays confuse the operator or it will help, because he thinks in terms of events; right? The display won't tell him event. It will tell him some symptoms.

MR. ALPHONSO: It will provide information to aid. It's an information tool that provides him information to help him diagnostic --

MR. CATTON: Is the instrument part of the training program?

MR. ALPHONSO: Yes. It will be part of the training program.

MR. WARD: Let's get it straight. I think we are talking about the future here. Their computer diagnostic is something in the future, and when you get in the future you'll integrate it with the emergency procedures and the training, but I don't think we are talking about it today.

MR. ZUDANS: It's not in the future. The diagnostics capability by January 1, 1984. It won't have reference to procedures to be followed suggested by

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computer, but nobody is asking for that.

MR. WARD: No, I think I heard a different answer to the question than you did.

MR. PEELER: I think the diagnostic capability as far as diagnostics in the computer in the use of emergencies is not a function that is going to be operable in the computer in 1984.

MR. CATTON: But all kinds of symptoms can be brought up on the screen. It's not going to be turned off.

MR. PEELER: No, it's not going to be turned off. It is another tool. It's a source of information to support the instrumentation that's on the control board in combating emergencies or transients.

MR.CATTON: And that aspect of it is built into your training program?

MR. PEELER: Yes, it is.

MR. ZUDANS: What you are saying, you have certain displays that show the state of reactor of the plant.

MR. PEELER: That is correct.

MR. ZUDANS: And, of course, these displays are function oriented, naturally?

MR. PEELER: Yes.

MR. ZUDANS: It shows the symptoms; if it is

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hot it shows hot, but this should not then interfere with the operator to identify the event in case and proceed to look up proper procedures? That's the thinking behind it; right? In other words, the computer is not going to say you will have this event?

MR. PEELER: No. The computer is not going to diagnose an event for us. It is a tool, and it will have backup information as far as parameters and stability system operation.

MR. ZUDANS: I think it is okay now.

MRS. SABRI: If I may just comment, in the systems training we try to emphasize events only. We talk about the event phases. When we do the training we try to stress very much integrated plant response, is how every system affects other systems, so the operator is not supposed to be looking at only one indicator and be a total vision one direction. He is supposed to be looking or move on one indication. So that I believe you are moving from symptom base versus event phase, such as -- it's a second reconsideration. As long a they are doing the assistance training and integrated plant response.

MR. WARD: Let's go ahead, please.

MR. PEELER: Any other questions?

(No response.)

One area that I did not get into

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with the emergency operating procedure is the human factors review that is presently going on with the event base procedures. That's in progress now on the Waterford III control board is being done by Westinghouse. It's a human engineering portion of our review of our procedures. It's a walk down of the procedures, and filming the actual flow of the procedures on the control board itself. That's being done in conjunction with Westhinghouse, and is using some of our plant operators to perform the functions.

If there are no questions, that concludes the presentation.

MR. WARD: Okay. Thank you. We are running a good bit behind. Let's go ahead with Mr. Lowe, please.

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MR. LOWE: Good morning.

My name is Don Lowe. I'm Training Development Manager, Waterford 3.

Two subjects I'd like to talk to you about this morning is the detailed control room design review and it's status and tell you shortly where we have implemented training concerning the technical support center and EOF.

A quick background, a very quick review on how we got where we are at on the control room design review, it is a major project which is being completed early next Spring and we are rather proud of it, but to say to build an advance plan on modern computers made back in 1975, nearly eight years ago, at that time LP&L instituted a plant operation review program, the idea being to look at every system, identify the operator information needs, make sure that those information needs were on the main control board in the proper location and proper sequences.

I realize this was some time before TMI and 0700.

The actual formal control room design review program was initiated in November of '80. They evaluated it. They had -- they, I say. I wasn't here at that time.

Lockheed came in and done a human factor study of the control board itself. Ebasco and Louisiana Power and

Light engineers cooperated in this effort and they published the LED report late in 1981.

At the same time, they done some PRA work to make sure that all events were properly located on the control board and in December of 1980, they built a formal program that specified where they were going from then until start-up.

At that time, Lockheed built a half-scale model you heard referred to, to do their design of the enhancement program; instrument locations and all that.

LP&L formed the Human Engineering Committee --

MR. WARD: So, this half-scale model that is now being used for training, started out as a development model for for improving the control room design?

MR. LOWE : Yes, sir.

Actually, a photographic model of the plant, half-scale. It was built by Lockheed out in California, just recently moved, in the last couple of months, down to --

When they were done with it as an enhancement project, we moved it and kept it for our training program.

MR. SIESS: This is a model of what?

MR. LOWER: The entire control room, sir. Half size. Very handy little gadget.

You'll see it this afternoon, I think. It's

not enhanced yet. We have to update the enhancement model.

In late 1981 LP&L issued their HED report that involved 138, I believe it was, ATD's, identified problems and they went to work on them.

They formed this committee which is made up of Lockheed, Ebasco , Westinghouse, LP&L, you name it. A whole bunch of consultants.

Large human factors input and they decided what they were going to do with each of these HED's they had identified.

Human Factor Engineering Branch, and I see I left the date off, came in in May of this year and done the audit of the program and the control room and we began the enhancements in August of this year. We expect to complete revision of all the enhancements in December of this year.

Those are ongoing and we are about eighty percent (80%) through the enhancements right now. You'll see them in the control room this afternoon.

MR. PEARSON: You say human factor engineering branch. Is that NRC?

MR. LOWE : Yes,sir.

MR. PEARSON:I didn't recognize the title.

MR. LOWE: What's the title of your branch up there, Ann?

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A VOICE: Division of Human Factor Safety.

MR. LOWE: That audit occurred in May of this year, 10th to 13th. We delivered our response report to human factors October 22nd; went up last week to review that report with Human Factors and agree on schedules and that sort of thing.

The majority of the deficiences found in this audit cover the three areas you show there. They are essentially -- they boil down to Functional Locations and Readability or Intelligibility of the Control Room Board.

MR. BENDER: Were the recommendations that the NRC made implementable?

MR. LOWE : Yes,sir. The great majority.

Of course, you realize we had already identified 138. I think Ann's group added another 80 or 90 to that. I think we had around 200 or 225 total.

MR. BENDER: But you could take care of most of them?

MR. LOWE : Yes,sir. Most of them were pretty straight forward.

We had, I think -- well, I'll show you in another slide.

(Slide)

During our review last week with the NRC we designed and agreed upon an implementation schedule for

each of the actions to clear these ATD's and, in the discussion of these ATD's and our response, we agree, I think, on about 26 items where our answer was inadequate but further explanation cleared it up and we revised the response in our report that we're going to issue within a week or ten days.

We also agreed, since there were some items that will not be cleared up before hot functionals and those dates, to give continuing evaluations of these seven areas you see here, so that they know that what we discussed in Washington last week doesn't get dropped. We go on with an ongoing program.

MR. BENDER: What does the term habitability imply?

MR. LOWE: We're talking here about control room space itself, sir. The storage, to protect equipment, references, the furniture. You know, the livability of it, too.

MR. WARD: Let me ask a question here, and see if I understand what the evolution has been.

The original control room design was enhanced with the 1980 study, I guess. Were there actually changes made in the control room as the result of this -- the review that was made, started in 1980 with Lockheed and others?

MR. LOWE: Yes,sir. Quite a few.

Lockheed and LP&L together identified quite a number of areas; particularly in the location of instruments --

MR. WARD: Okay. But those enhancements or improvements were all in place when the next review was made?

MR. LOWE: When the NRC audit was made?

No,sir, they weren't. As a matter of fact, a lot of the HED's were identical to the original fidings.

MR. WARD: That's what I'm driving at.

Did the NRC audit show up -- well, you said it added 80 to 138 or something to --

MR. LOWE; Somewhere in that area.

MR. WARD: The 138 were what you had identified as desirable changes in your 1980 --

MR. LOWE: Yes,sir.

Some of those were complete. Some were ongoing. Some were under study at that time, when the NRC audit occurred.

MR. WARD: All right. Thank you.

MR. LOWE : I think this adds up to 225. I should have added it up for you, I guess.

The status of that program today is that we have completed action on those 30. We've scheduled to complete 58 more of the hot functionals; an additional

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93 by fuel load. We resolved 40 of them without a committed action, either with a clarification of ATD's or we decided there was no action necessary or possible, in some cases, and we agreed to do four by first refueling.

I may add that this is really a deadline, not a schedule. Each of these ATD's that involve any movement of instruments or change of instruments, is covered by a design change notice right now and they are being completed daily.

The major categories of modifications, again, were functional grouping of instruments. We changed instruments, added instruments. For instance, we added fourteen (14) ampmeters to major pumps to the control board after the audit.

Probably the most visible result of the control room design review is the enhancement program which involved a standardization of colors, terms, abbreviations, the layout of the demarcation lines; that sort of thing.

The sort of thing that makes the control board much more readable and, of course, reduces your propensity for errors.

And, of course, one of the major problems is you have many vendors input into that control board and to standardize their displays is a major problem.

Any further questions?

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MR. WARD: Any other questions?

(No response.)

MR. WARD: Thank you, Mr. Lowe.

MR. CATTON: I think in your questionnaire you have a continuing human factor program.

MR. LOWE: That's a listing of the continuing human factors programs that LP&L has agreed to go on with to make sure that the enhancements and the control room design stays up to date.

The habitability study we're going to try to complete by Decemer, 1982. The emergency procedures validation, you may note that those two dates on my slide are different than Bud's. By the end of next week we'll have a report by Westinghouse on all of the -- if they find any human engineering problems involving the emergency operating procedures walk-through that's going on in the control room right now.

We're considering becoming a part of the operating maintainability study. We threw in the alarm response manual because it's one of the man-machine interfaces, particuarly in the area of backup information in the validation of these alarms to the operator.

And we intend to use the simulator, when it arrives on the spot, to do procedure validations and all the other man-machine interfaces.

And, again, the HED committee is a permanent organization.

MR. PEARSON: Who in the organization is responsible for all of this or overlooks it?

MR. LOWE: Excuse me, sir.

MR. PEARSON: Who in your organization oversees this? Has the responsibility for seeing all these things are done?

MR. LOWE: I do.

MR. PEARSON: You?

MR. LOWE: Yes, sir.

It's not a single responsibility. There's about a dozen people back there involved in this project.

MR. WARD: I guess I'm a little puzzled here. Some of this work doesn't seem to fit in what I call training. I think much of what you talked about. So, your responsibility is really broader than training; is that right?

MR. LOWE: We have what you might call a unique training organization, sir. How we got there might take us a little while but the main point was, that during that plant operational review program that I told you they started in 1975 and worked on for about -- well, I guess some work is still going. They developed an enormous data base about that plant. An enormous information source.

That had to be preserved and updated and kept up somehow, so you give it to the person with the most vested interest; right?

A training man just loves to give out the right information, so, based on the fact that that base was there and that Dr. Sabri is a Human Factors expert, it was sort of adopted as -- it's a beautiful information source. It's unbelievable how much information is there.

MR. WARD: Okay. Thank you.

MR. LOWE; This shows very briefly the training that was put into the people that work in the TSC and EOF. Fred Drummond will address the facilities themselves, as soon as I'm done here.

The 290 of 330 of our central personnel have been trained in GET and the essential personnel course, which just simply identified the emergency plan, how it fits with everybody.

The tech support center, 31 of the 35 designated people to work there have been trained. At this point, the only primary person that has not been trained is one of the engineers in a position that is presently filled with a contractor. So, the alternates have been trained. The primary has not.

And, again, that's the course content of what we give.

We've given way more than the required number of people the Radiological Dose Assessment course, since that's sort of the heart of the whole program.

Emergency Off-Site Facility, the EOF -- I should say Emergency Operating Facility -- we've trained 24 of 25. The one person who is not rrtrained is a communicator.

To date, at least seven drills, toally 1640 hours, are only those where we have activated all the facilities.

There's probably another 18,000 man hours invested in training for emergency plan in many drills, table-top exercises, that sort of thing.

I didn't bother to total those up.

Any questions here?

MR. WARD: Any other questions?

(No response.)

MR. LOWE: In that case, I give you Mr. Fred Drummond, if you'd like to go on.

MR. WARD: Yes, please. Let's go ahead.

MR. DRUMMOND: Good afternoon.

My name is Fred Drummond. I am the Project Support Manager.

One question came earlier. Mr. Zudan's, I believe, and was about the safety on-site review group and I wanted to address that real quick.

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Basically, the on-site safety review group has two functional sections. One is operational assessment where we have two LP&L people and two contractors filling slots now and ISEG , which is the Independent Safety Engineering Group.

Both of these groups are functioning right now. They are actually functioning. This group is doing start-up reviews and we have plans for hot functional testing and the operational assessment group is functioning, doing the operational assessments.

My part on the agenda was Emergency Response Facilities and the SPDS system.

In persepctive, to give you an idea of where we're at with Emergency Response Facilities, we have right now an interim emergency operations facility, which is physically located on the site and you should be able to see that this afternoon.

Our long-range plans are to have the emergency response facility located in the training facility, which we are committed to have built by 1984.

The alternate emergency operations facility is located in Gretna, Louisiana, across the river from here and my office is located across the river.

The technical support center surrounds the control room envelope here. That is a permanent facility

as well as the operations support facility at the plant site.

(Slide)

This slide -- I'm not going to go over it in detail. It's the purpose of the facility and it's used in some of our training. In the interest of time, I guess we can leave that for the packet, but I think it's pretty much -- it describes the purpose of the facility as the guidance document, you asked us to provide.

The technical support center, this is the layout. You should see this this afternoon.

This is the control room envelope itself. Or this is the control room itself. The entire area is the control room envelope, which is a habitable area and it's own ventilation system.

The computer room is part of the technical support center and has a conference room, a record storage area. This area has an extremely wide hall where we're going to have fold-down desks for an engineering technical assessment area. The brain room, so to speak.

The control center is located in this area.

MR. CATTON: Is there a window between that control center and the control room?

MR. DRUMMOND: I don't know.

Dave? Is there a window between the control

center and the control room? We took that window out; didn't we?

MR. LESTER: There is a window between the passageway and the control room.

MR. DRUMMOND: We were going to have -- right here; is that it?

MR. LESTER: Actually, there's two. One there and one near the computer room.

MR. DRUMMOND: There's no window here. (Indicating.) The control boards actually come like this. (Indicating.) Across here.

MR. ZUDANS: I must have missed something. You have a new emergency control center?

MR. DRUMMOND: That's the emergency control center within the technical support center.

MR. ZUDANS: Oh.

MR. DRUMMOND: That's where Mr. Lester is and his immediate staff. Kind of the brain room.

MR. ZUDANS: That's a piece of the technical support center?

MR. DRUMMOND: That's right.

It's kind of the brain room of this whole operation which we have spread out around. This is the focal point where information is --

MR. ZUDANS: All right.

8-15

MR. CATTON: Is there any way, without interfering with what's going on in the control room, you can see what's going on in the control room?

MR. DRUMMOND: This double door here has windows in it.

MR. CATTON: Okay.

MR. DRUMMOND: There's no video capability.

MR. CATTON: That's what I was thinking about. It's one of the things they found valuable, was to be able to see what's going on. You get the feeling that there is a sense of rhythm by watching.

MR. DRUMMOND: Well, looking in here, the control board, like I say, comes kind of like this. You can see what's going on at the control board and you can tell, I think, quite easily what state the operator's in.

The emergency operations facility described on this slide and the back facility in my office, which is about eighteen miles as the crow flies, from the plant site itself.

The temporary emergency operations facility is laid out like this and it's located on-site, in a construction building. The EOF director's office, which is down in this corner, is actually Mr. Moran's office, on-site now and he is the EOF director.

The EOF operations room is located here and we

8-16

have a rad assessment area here, a conference room and a communications room.

Other space in this building presently is being occupied by start-up engineers, but when we get to a mode where we will have fuel and we will load the reactor, all of that area can become additional work area for staff engineers that would be called out from my staff, downtown to work in the building.

Before I start into the safety parameter display system, I guess I'd better introduce it by saying, we have a combination safety parameter display system. We have what's going to be an LP&L system and then we have the combustion engineering qulified safety parameter display system.

I guess we were a victim of -- not a victim but we had to make some decisions a year and a half ago in terms of what we were going to do to meet NUREG 0737 requirements and, at that point in time, we decided to use our plant computer with a required, at that time, qualified backup. In fact, it's still required but I've seen three or four versions of SECY 82.111. I think it's getting close. I've seen the draft letter that's going to be coming out, that has really backed off on the requirement for a qualified safety parameter display system.

So, we have what will be our only computer

safety parameter display system, as well as the qualified system and that's what I'll be talking about.

Basically, I think our safety parameter display system is described there as two computer driven CRT's and an operator's console.

We have a redundant computer system. I think the sub-committee heard that at the first sub-committee meeting.

Colorgraphic displays being located in the control room with operator commands. Display formats and we haven't finalized the display formats. We've got from various inputs and I want to talk about parameter selection in a minute.

But we were trying to follow as close as we can, the industry and the evolvement of SECY 82.111 and we'd like to finalize our final display formats in our final inputs following the Regional meetings that I believe are going to be scheduled.

The computer programs, the whole software package to give us the capability to display, has been written and is being debugged in the plant computer right now.

The hard part -- not the hard part but the critical ingredient is the parameters and the program that's going to put those parameters in the proper format to

8-18

display them to the operators and we, I think, in line with what it looks like SECY 82.111 is going to say, will finalize the schedule on that following the Regional meetings.

In fact, the letter is going to ask for us to give them a schedule within sixty days, if I'm not mistaken.

The documents that were used, these documents were primarily used, not only for the safety parameter display system, our computer driven system, but were also used to some degree for the qualified safety parameter display system.

They are all various documents that have evolved since Three Mile Island and I guess one document that's left off the list, is the final safety analysis report that was used in selecting the paramaters for the QSPDS and the parameters for QSPDS have been selected and that equipment is on order.

The selection process we want to complete for computerized system, like I say, after issuance of the SEC 82.111 letter, as well as the Regional meetings.

MR. CATTON: That's certainly a lot of documents to sort through. What do you do?

MR. DRUMMOND: Some of them date back quite a ways. Some of these NUSAC, some of these early NUSAC,

8-19

Nuclear Safety Analysis Center reports, go back early on -- this NUREG contractor -- I don't know what NUREG it was folded into. That was an early -- back in 1980 -- NUREG and, of course, 0696, the bulk of what's there is pretty much referenced in SEC 82.111 as regard to those documents and we've got a lot of documentation and a lot of meetings and a lot of people sat in a room going through a selection process, to come up with QSPDS parameters, which we intend on using those QSPDS parameters, with other appropriate parameters that might come up at the Regional meetings.

MR. BENDER: Are any of those documents in conflict with each other?

MR. DRUMMOND: I'm not sure. If I was betting, I would say maybe that some of them are.

MR. ZUDANS: Could I have one question, please?

Didn't you say that there are essentially two systems. One is displaced in two computers when the CRT's are displayed in the console for the operator and the other one is a hard qualified set of instruments someplace else?

MR. DRUMMOND: I've got a couple of slides on that in just a second.

MR. ZUDANS: All right.

MR. DRUMMOND: Within the emergency response facilities from the plant computer QSPDS, we will have this hardware.

This will be hardware in the TSC, as well as the hardware in the EOF, itself.

SECY 82.111 asks that we address certain parameters or variables within REG Guide 197.

Some of those won't be on SPDS but we have another system that's called a Computerized Emergency Planning Data Acquisition System, which will provide meteorlogical data and radiation monitoring data.

They will also be in these facilities.

Software for this is basically the system software itself. The colorgraphics, report generation system. We have a couple hour pre-event data collection and recording system and post-event collection system and, of course, retrieving historical information.

MR. BENDER: Is your SPDS going to be similar to the one at Palo Verde or will it be different or will it be similar to some other combustion system or what are the criteria?

MR. DRUMMOND: Combustion have a complete package that they had proposed, called -- well, it was a total critical function monitoring system and part of that critical function monitoring system was the safety parameter display system and emergency response facilities components.

The other part was the qualified safety

parameter display system, which was the backup to that.

8-21

Ours is going to be, I would hope that it's going to be as consistent as it possibly can be following these Regional meetings. I think that's the purpose of these Regional meetings, is to get some kind of consistency within the industry.

I've got proposals on my desk from Quadrex. I've got proposals from here and proposals from there and you look at them and, you know, they're not all the same Everybody's got different ideas and I think what it's going to boil down to, once we get into these Regional meetings, we get the general concepts that everybody else is using. We, as LP&L, along with our consultants, we're going to sit down and we're going to design our system and, hopefully, take advantage of what SECY 82.111 says and that's to get a preliminary staff review prior to finalizing the system.

MR. BENDER: Well, if there's one place where some standardization would be advantageous, I think it's in this system, because if you want to take advantage of national resources, I think people have to have general familiarity with what's in every emergency center.

# # #

MR. DRUMMOND: You see magazine articles where one company's got this type system. There are just numerous systems out there, and I think there's got to be some consistency.

Our bottom line is we want to come up with the right system for Louisiana Power & Light Company. We hope we can do that. We think we can do that.

The qualified safety parameter display system, basically it's a two-channel system. It's qualified Class I.E, and it's a complete safety system, has a plasma display system that will be on the main control board. System A -- Both systems, System A and System B had the degraded core cooling information on them. That's redundant on these two systems.

System A and System B deviate beyond the degraded core cooling information in that System A will have reactivity information, primary system integrity, and additional primary system integrity information, primary and secondary flow mass valves. And System B will have the containment integrity and radiation monitoring.

As I said, the plasma display, I think everybody is familiar with this color display and I have some color graphics if you would like to see them later on. I don't have them with me, but I've got a typical display directory for one channel, and -- well, I've got

it actually for both channels and you can see the 200 series, which is the core series, and that's core cooling information, saturation margins, reactor vessel level, and core exit theromocouples, will be the same on the other channel, and then when you get down to 300, 400 and 500 series you get into the things that aren't consistent between both channels.

This is the other directory, which you see the core information is the same, repeated and redundant, and then we have containment information and radiation emission diagnostics there.

This one sample page that I have here would be the core map that would show -- and this is the Channel A core map -- the location by number and quadrant of the core exit thermocouple, the combustion engineering point ID number, and of course it would display the temperature.

Then Channel B would have the other, not the same locations but the other 28 core exit thermocouples. And, of course, this just is telling us what the quadrant of the core of the steam generators are located in.

The other slide that I had is the very last slide in the book that you have, it's just a very simple slide mentioning the onsite simulator. We are

-3

going to have the exact configuration of what we have in the control room on the onsite simulator. The QSPDS will be implemented, will be modeled within the simulator computer. The base parameter display system will be also part of the simulator computer. So our plans are to have the exact replication.

That's all I had. Did you have any additional questions?

There was one other thing, if I could help, Mr. Zudans I believe you also asked about construction quality assurance. We have our quality assurance man here, but I -- we might can do it later on while we are on the site, we can show you the organization chart by numbers.

MR. ZUDANS: I don't think I have any questions.

MR. WARD: Are there any other questions. Mr. Maurin, would you like to make a comment at this time?

MR. MAURIN: No. I would like to introduce two people who are here, Mr. Ward. That is Jack Wyatt, our chairman of the board and chief executive officer, and Gerald McLyndon, our senior vice president of operations.

MR. WARD: Before concluding the meeting, this Subcommittee will report to the full committee at the December meeting the first week in December. At this time I don't anticipate there will be any need for LP&L

participation. Again, at the present time, unless the full committee has some other ideas, I don't see any particular follow-up that will be necessary, but we appreciate the information that you have given us today. It's been very helpful to us.

So, we conclude the meeting.

(Whereupon, at 1:10 p.m., the meeting in the above-entitled matter was adjourned.)

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NUCLEAR REGULATORY COMMISSION

This is to certify that the attached proceedings before the

_____

in the matter of: ACRS Subcommittee Meeting On Waterford Steam Electric Station, Unit 3

Date of Proceeding: November 9, 1982

Docket Number: _____

Place of Proceeding: New Orleans, Louisiana

were held as herein appears, and that this is the original transcript thereof for the file of the Commission.

Mary L. Bagby

Official Reporter (Typed)

Mary L. Bagby

Official Reporter (Signature)

LVM-ACRS
11/9/82

AGENDA

- INTRODUCTORY REMARKS
  - FUTURE SCHEDULE-CONSTRUCTION COMPLETION, HOT FUNCTIONAL TESTING, INITIAL FUEL LOADING, STARTUP, COMMERCIAL OPERATION, ETC. — L.V. MAURIN
- STATUS OF STAFFING
  - POSITIONS CURRENTLY VACANT — L.V. MAURIN
  - SRO/ROS LICENSED VS. NEEDED — L.V. MAURIN
  - SUMMARY OF EXPERIENCE LEVELS (NAVY-NUCLEAR, COMMERCIAL NUCLEAR, FOSSIL, ETC.) — L.V. MAURIN
  - INTEGRATION OF CONTRACTOR EMPLOYEES IN STARTUP AND TESTING ORGANIZATIONS — D.B. LESTER
- OPERATOR TRAINING PROGRAM
  - PROGRESS IN MEETING TRAINING PROGRAM OBJECTIVES — Z.A. SABRI
  - STATUS OF TRAINING PERSONNEL VS. SCHEDULED NEEDS — Z.A. SABRI
  - FEEDBACK OF INDUSTRY EXPERIENCE TO TRAINING PROGRAM — Z.A. SABRI
  - DESCRIPTION OF SIMULATOR TRAINING
    - HOW IS THIS TRAINING SUPPLEMENTED BY WATERFORD 3 SPECIFIC FEATURES — C. TOTH
    - ONSITE SIMULATOR INSTALLATION SCHEDULE — Z.A. SABRI
    - ACCIDENTS AND ABNORMAL OCCURRENCES INCLUDED IN SIMULATOR TRAINING — Z.A. SABRI
  - HOW ARE INDUSTRY RELATED EVENTS FACTORED INTO THE SIMULATOR TRAINING — Z.A. SABRI/C. TOTH
  - HOW IS SPDS INCORPORATED INTO CURRENT SIMULATOR TRAINING — C. TOTH
  - WILL THERE BE AN SPDS WITH THE ONSITE SIMULATOR — Z.A. SABRI

- STATUS OF CONTROL ROOM HUMAN FACTORS UPGRADE (SECY 82-111)
  - EMERGENCY OPERATING PROCEDURES- STATUS OF DEVELOPMENT, INCORPORATION WITH TRAINING AND SIMULATOR PROGRAM, PARTICIPATION WITH OWNER'S GROUP, CE INPUT — G.R. PEELER
  - DETAILED CONTROL ROOM DESIGN REVIEW- RESULTS OF REVIEW, MODIFICATIONS MADE TO ORIGINAL CONTROL ROOM DESIGN — D. LOWE
  - TECHNICAL SUPPORT CENTER AND EMERGENCY OPERATING FACILITY
    - HOW ARE THESE FACILITIES INCLUDED IN PRESENT TRAINING PROGRAM — D. LOWE
  - TECHNICAL SUPPORT CENTER AND EMERGENCY OPERATING FACILITY — F.J. DRUMMOND
    - DESCRIPTION AND SCHEDULE FOR COMPLETION — F.J. DRUMMOND
  - SPDS — F.J. DRUMMOND
    - DESCRIPTION AND SCHEDULE FOR COMPLETION — F.J. DRUMMOND
    - HOW ARE PARAMETERS SELECTED — F.J. DRUMMOND

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11/9/82

AGENDA

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KEY MILESTONES

• ECCS FLOW TEST	*8/6/82
• COLD HYDRO	*10/2/82
• HOT FUNCTIONALS	1/18/83
• INTEGRATED LEAK RATE TEST	3/11/83
• ESF LOSS OF OFFSITE POWER	3/19/83
• FUEL LOAD	5/12/83
• COMMERCIAL OPERATION	1/14/84

* ACTUAL START DATES

LVM-ACRS

11/09/82

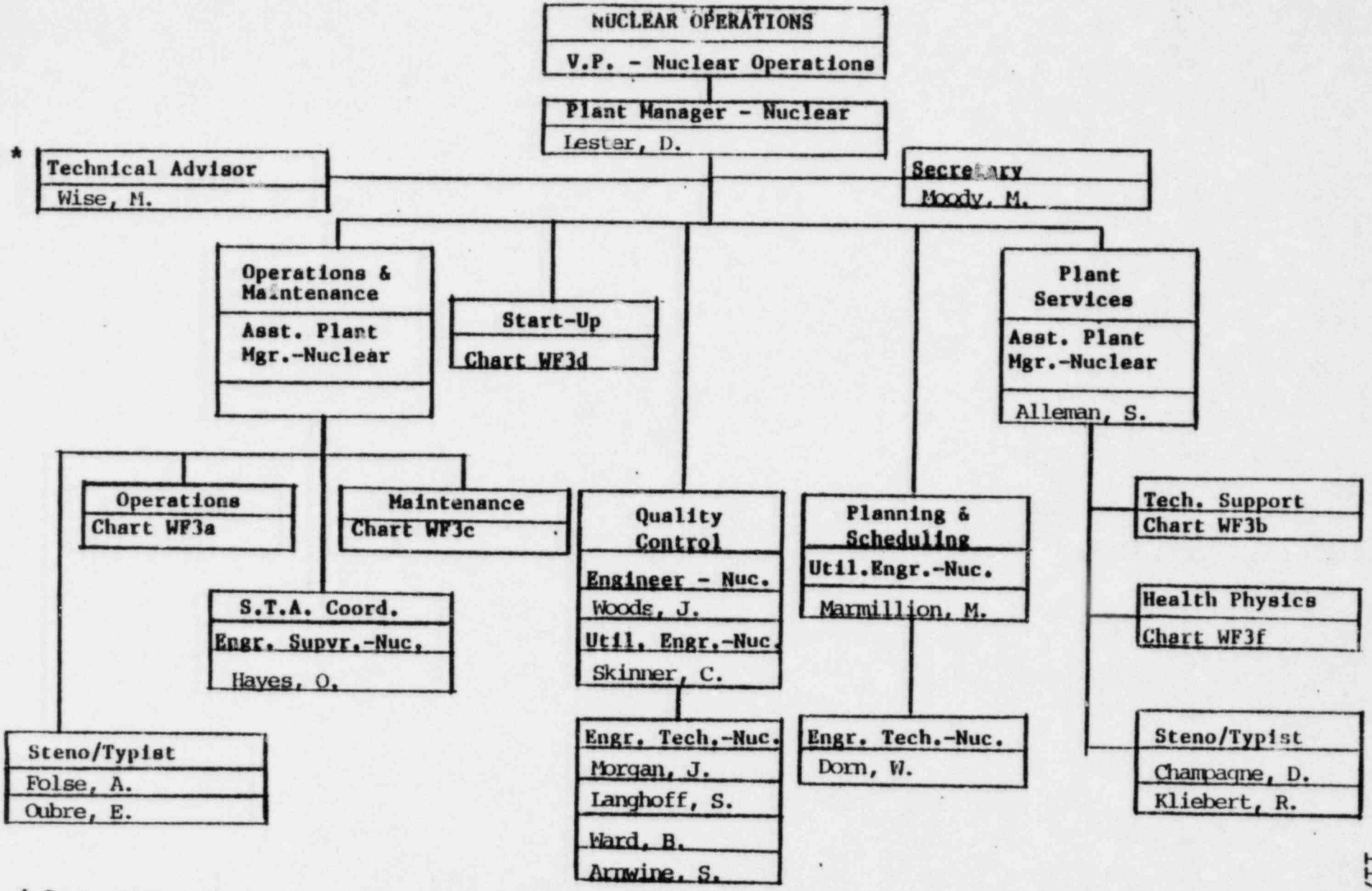
NUCLEAR OPERATIONS STAFFING

	APPROVED 3/03/82	PERSONNEL HIRED AS OF 2/28/82	APPROVED 11/09/82	PERSONNEL HIRED AS OF 11/05/82
NUCLEAR OPERATIONS				
STAFF	2	2	2	2
PLANT OPERATIONS				
STAFF	10	10	10	9
STARTUP	23	12	23	21
MAINTENANCE	76	63	76	64
OPERATIONS	67	65	67	63
TECHNICAL SUPPORT	47	32	47	43
HEALTH PHYSICS	27	14	27	23
QUALITY CONTROL	6	6	6	6
TOTAL	256	204	256	231
PROJECT SUPPORT				
STAFF	2	2	2	2
CONSTRUCTION ENGRG.	12	7	12	11
OPERATIONAL ENGRG.	26	12	26	21
TECHNICAL SERVICES	15	9	15	11
ONSITE SAFETY REVIEW	9	4	9	5
LICENSING	13	6	13	12
TOTAL	77	40	77	62
TRAINING				
STAFF	11	6	55	13
QUALITY ASSURANCE				
STAFF	21	17	32	26
ADMINISTRATIVE SERVICES				
STAFF	59	49	60	58
TOTALS	426	316	482	390

LVM-ACRS
11/9/82

ACQUISITION OF VITAL PERSONNEL

PLANT STAFF	COMMITTED 4/20/81	HIRED AS OF 2/28/82	HIRED AS OF 11/5/82
OPERATIONS SUPT.	1	1	1
ASST. PLANT MGR., O & M	1	1	0
PLANT ENG. DEPT. SUPV.	1	-	1
GENERAL SUPPORT SUPT.	1	-	1
NUCLEAR OPERATIONS SUPV.	6	6	6
NUCLEAR AUXILIARY OPERATOR (COLD LICENSE)	10	10	10
NUCLEAR AUXILIARY OPERATOR (HOT LICENSE)	10	11	10
PLANT UTILITY ENG.	3	3	3
STA ENGINEERING SUPV.	1	-	1
PLANT ASSOC. II/I ENG.	5	5	5
OFFSITE SUPPORT			
ONSITE SAFETY REVIEW ENG. SUPV.	1	1	1
ONSITE SAFETY REVIEW ENG.	1	-	1
OFFSITE TRAINING SUPV.	1	-	1
NUCLEAR TRAINING DIR.	1	1	1
CONSULTANTS			
TECHNICAL ADVISOR TO VICE PRES. NUCLEAR OPERATIONS	1	1	1
TECHNICAL ADVISOR TO PLANT MANAGER	1	1	1
TOTALS	45	41	44



* Contractor

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LP&L TOTAL EXPERIENCE

3/3-4/82 ACRS

	NUCLEAR	NUCLEAR	OPERATIONS
N.O.D.	1340	760	205
QUALITY ASSURANCE	150	81	4
TOTAL	1490	841	209

11/09/82 ACRS

N.O.D.	1651	906	237
QUALITY ASSURANCE	196	95	15
TOTAL	1826	1010	252

*ABOVE NUMBERS ARE IN MAN YEARS

LICENSING PROGRAM

	REQUIRED	DESIRED	IN TRAINING
REACTOR OPERATORS	8	12	38*
SR. REACTOR OPERATORS	8	12	
OPERATIONS SUPT.	1	1	1
ASST. PLANT MANAGER	0	1	1
STA CO-ORDINATOR	0	1	1
PLANT ENGINEERS	0	1	2
MAINT. ASST. SUPT. I&C	0	1	1
NUCLEAR INSTRUCTORS	-	3	3
TOTAL	17	32	47

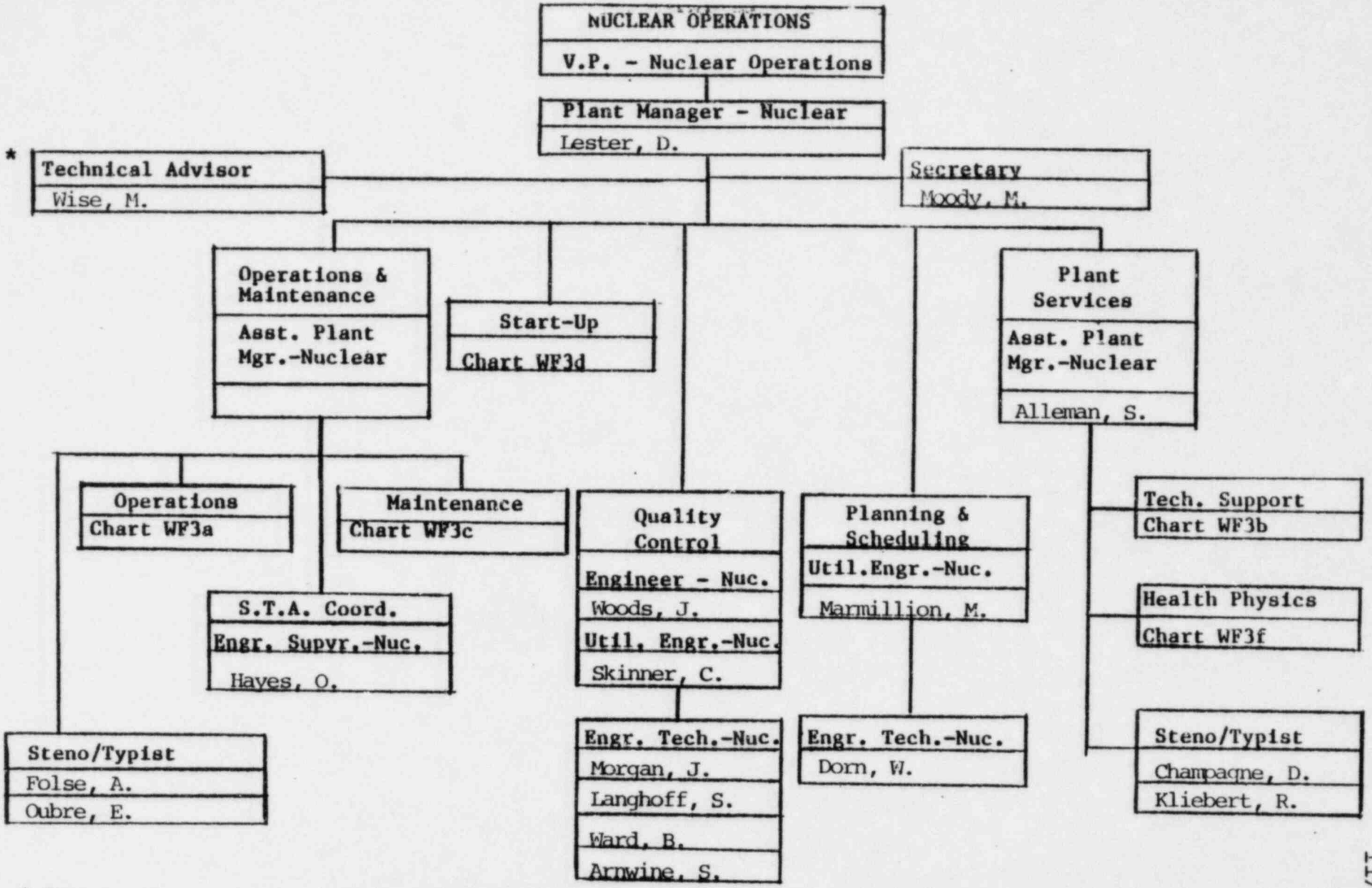
* THE TOTAL NUMBER IS INTENDED TO PROVIDE PERSONNEL FOR BOTH REACTOR AND SENIOR REACTOR OPERATORS.

SHIFT TECHNICAL ADVISORS

- NUMBER OF CANDIDATES
  - BEGINNING PROGRAM 18
  - SUCCESSFULLY COMPLETING PROGRAM 15

- CANDIDATE BREAKDOWN BY DEPARTMENT
  - PLANT ENGINEERING 2
  - NUCLEAR ENGINEERING 5
  - NPSG 6
  - STARTUP 2

*THREE (3) ARE IN THE PROCESS OF COMPLETING TRAINING



* Contractor

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Oper. & Maint. Asst. Plant Manager - Nuclear

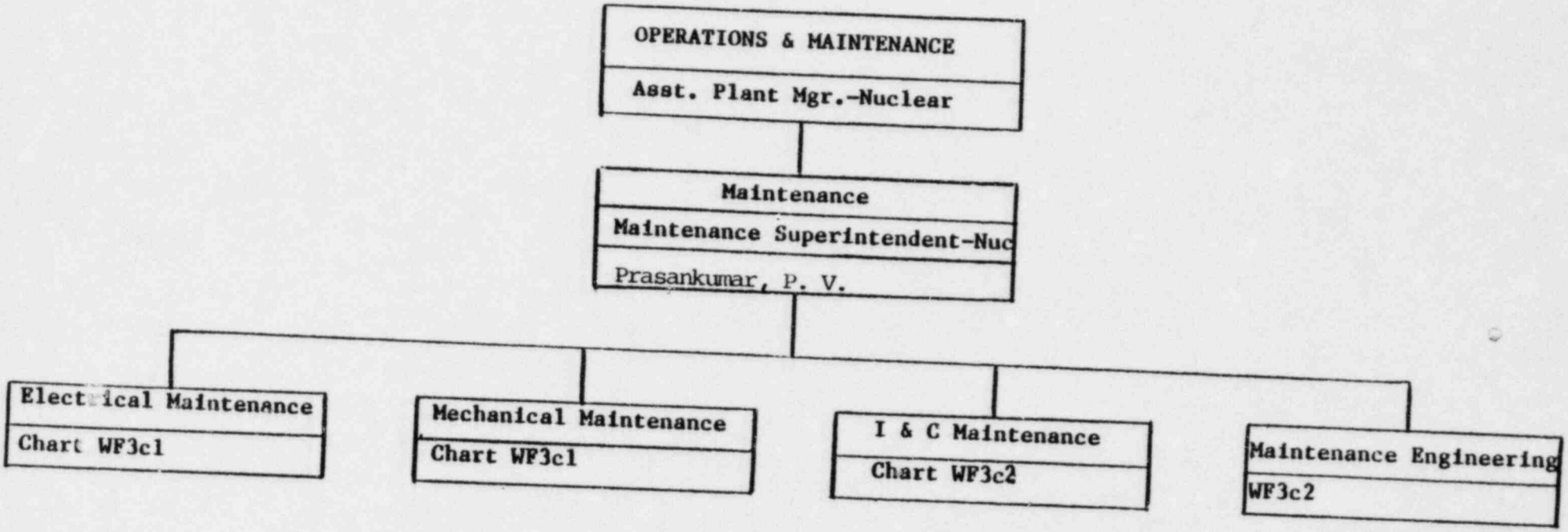
Operations Oper. Supt.-Nuclear * Peeler, G.

Nuclear Operations Supervisor*		
Edwards, J.	Booher, R.	Maley, J.
Ellard, J.	Olson, D.	Davie, G.
Smith, W.	McCann, J.	Perhala, G.
Bourgeois, M.	Crouch, D.	Contractor* (4)

Nuclear Plant Operator**		
Comeaux, J.	Hoffpauir, J.	Willson, H.
Pendergrass, W.	Jones, M.	Schreckengast, T.
Bowers, A.	Tillman, M.	Taylor, J.
Ortego, D.	Hill, D.	Darnall, J.
Nuclear Auxiliary Operator		
Beechem, C.	Collins, V.	Macias, R.
Brinkley, R.	Fugate, C.	Meyers, B.
Brown, K.	Henderson, L.	Miller, H.
Brown, T.	Hampton, J.	Miller, R.
Bumgardner, P.	Kiech, G.	Mitchell, D.
Burns, K.	Ledford, J.	Viator, E.
Nuclear Auxiliary Operator - Training		
Timmons, R.	Lietzke, B.	Greer, H.
Wemett, A.	Devlin, M.	Culliton, J.
Vest, A.	Rhodes, R.	Wilson, W.
York, R.	Kauk, T.	Huskey, M.
Nuclear Auxiliary Operator - Training* **		
Blanche, R.	Jory, D.	Collins, A.
Tullos, T.	Hymel, S.	
Matherne, B.	Lewis, H.	
Melancon, D.	Scallan, W.	

***SRO Required**
****RO Required**
*****These 12 positions required for Startup only and are to be reduced by attrition following commercial operation.**

* Contractor personnel with experience in specific areas are used to fill vacancies.



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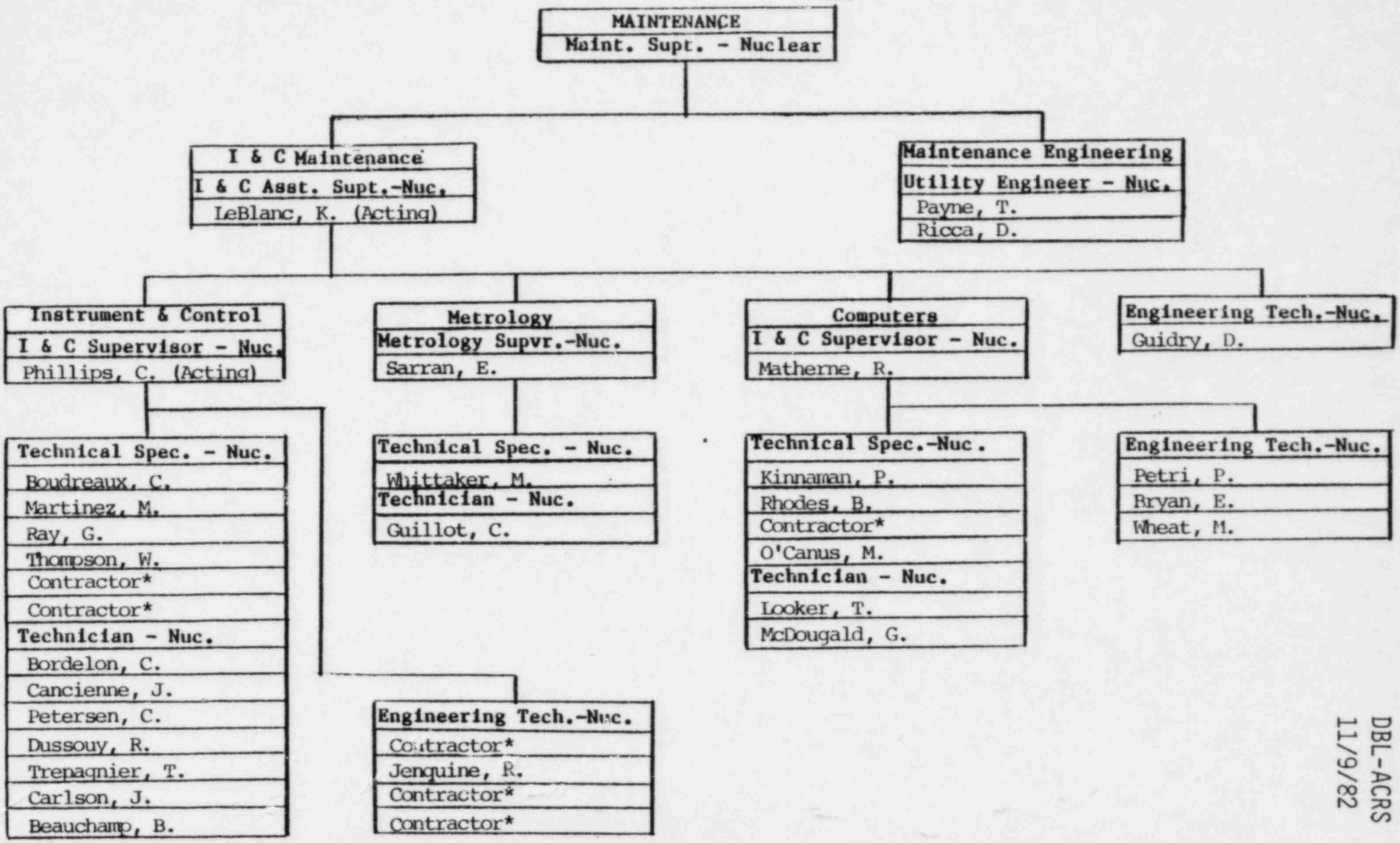

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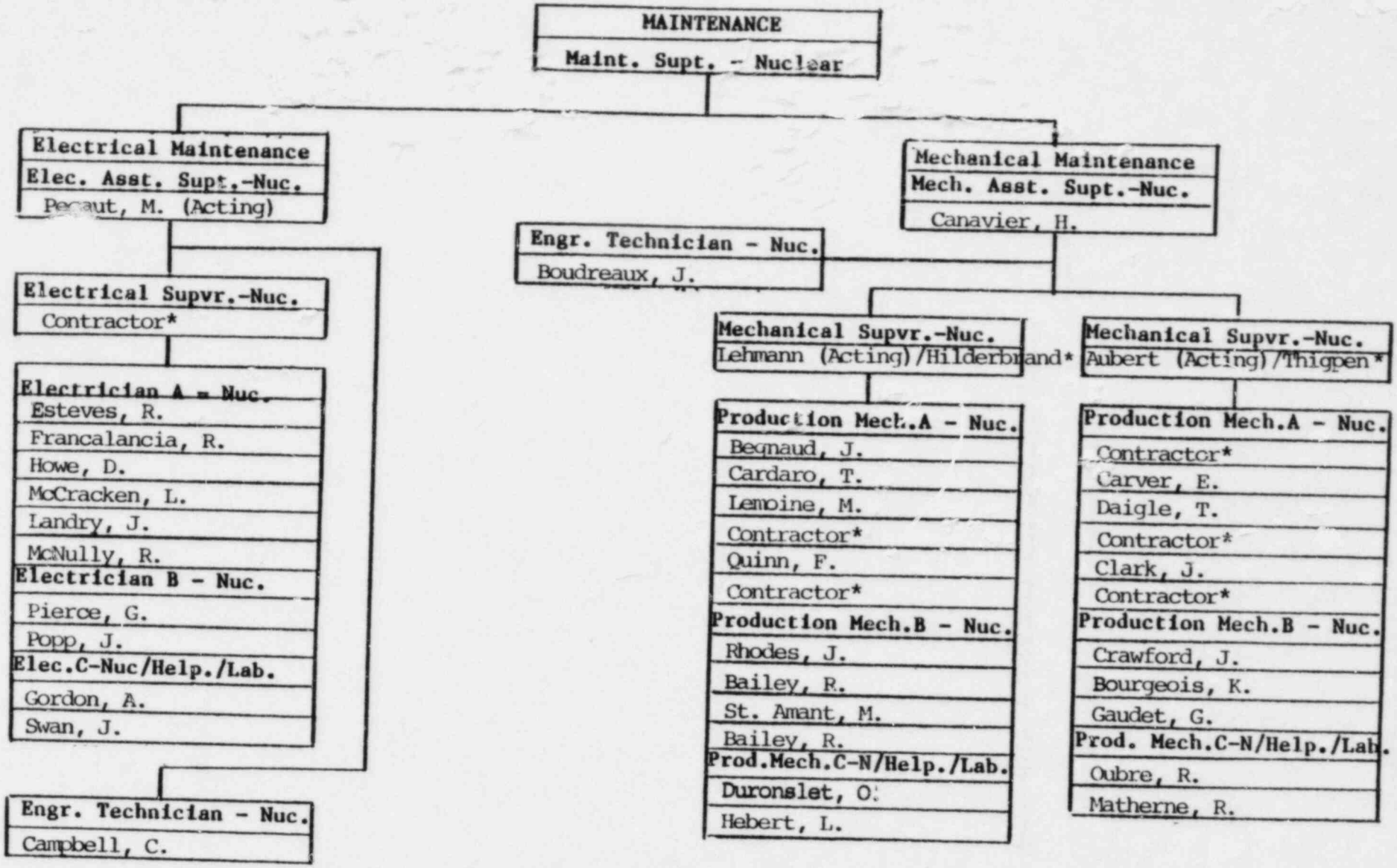

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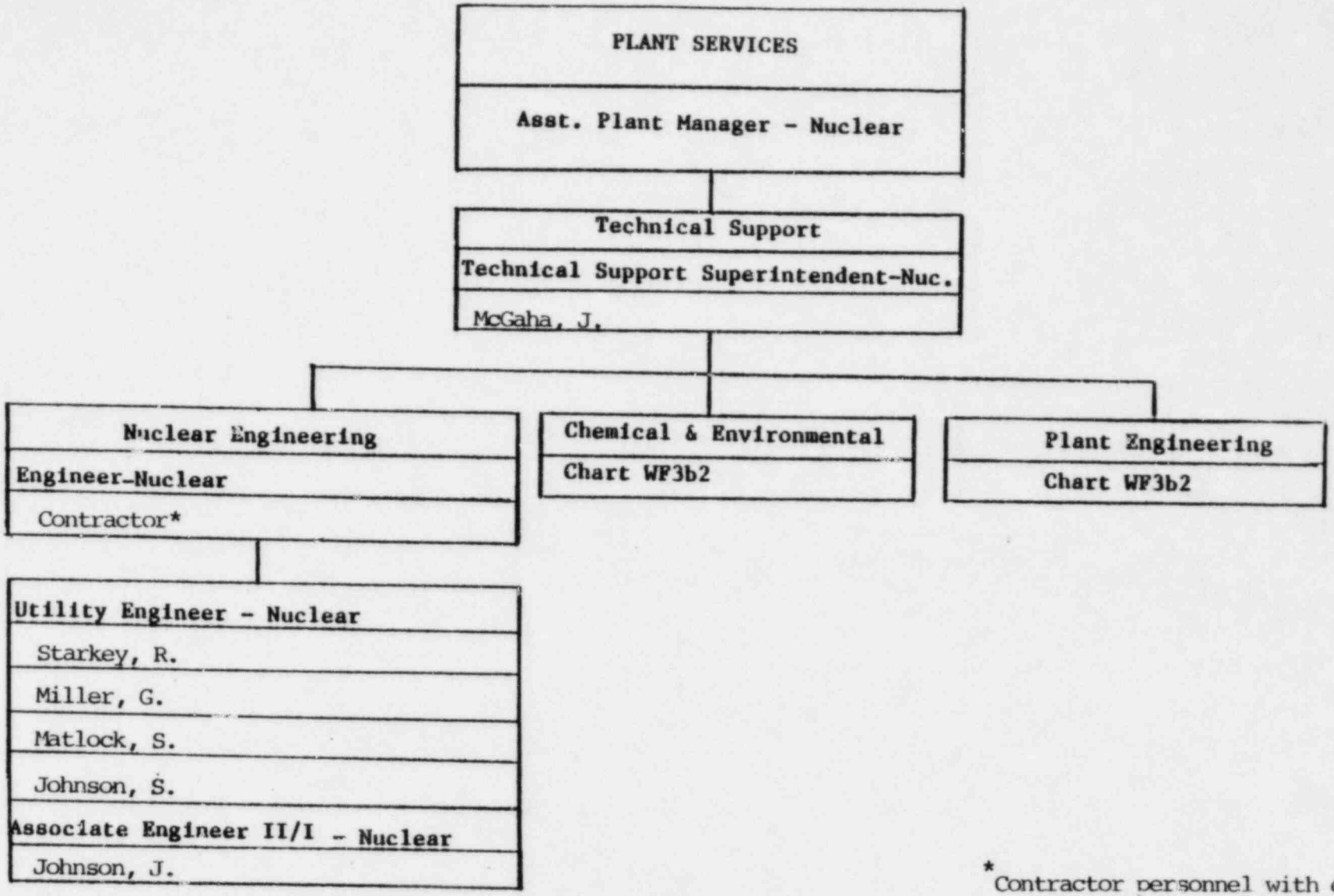

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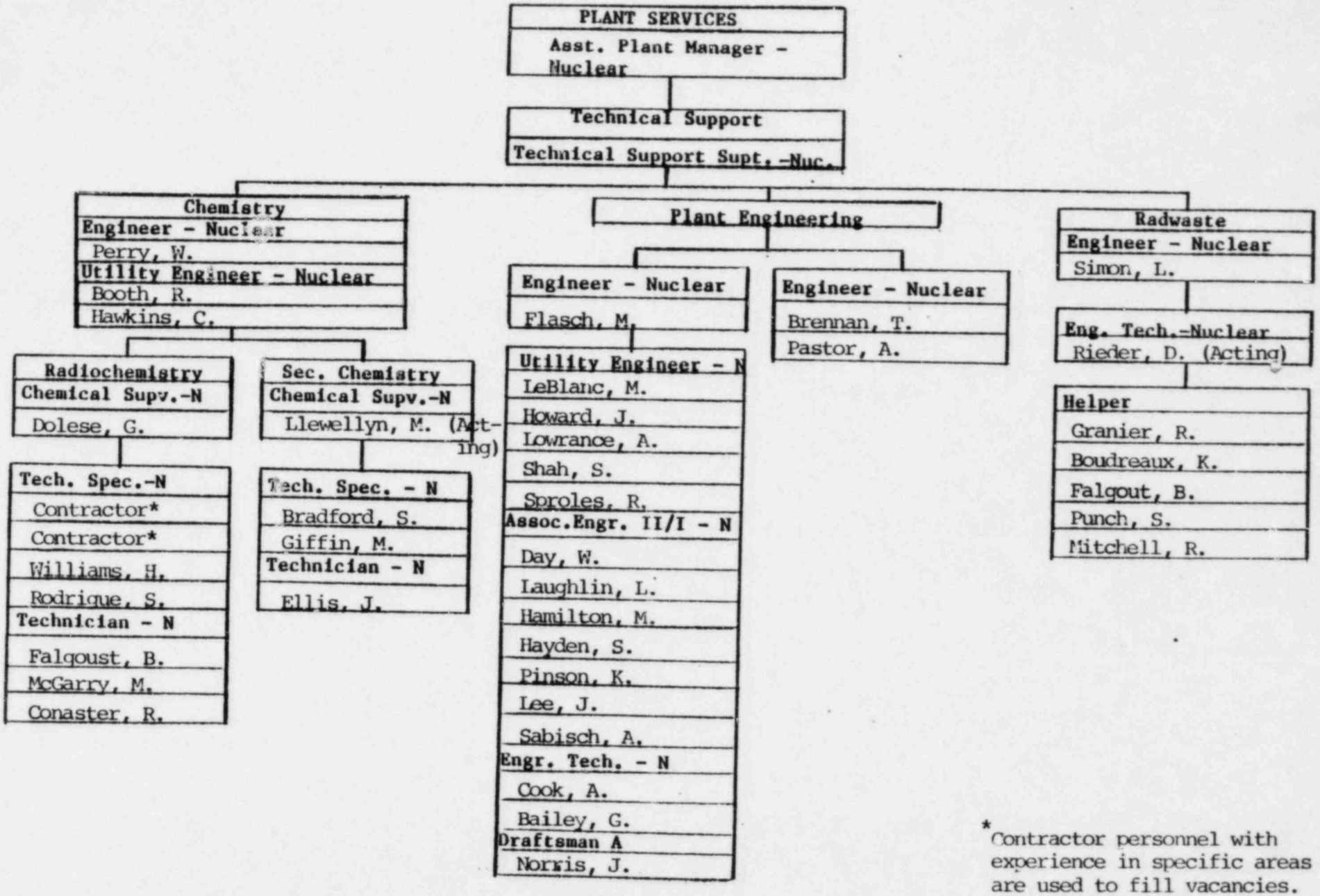

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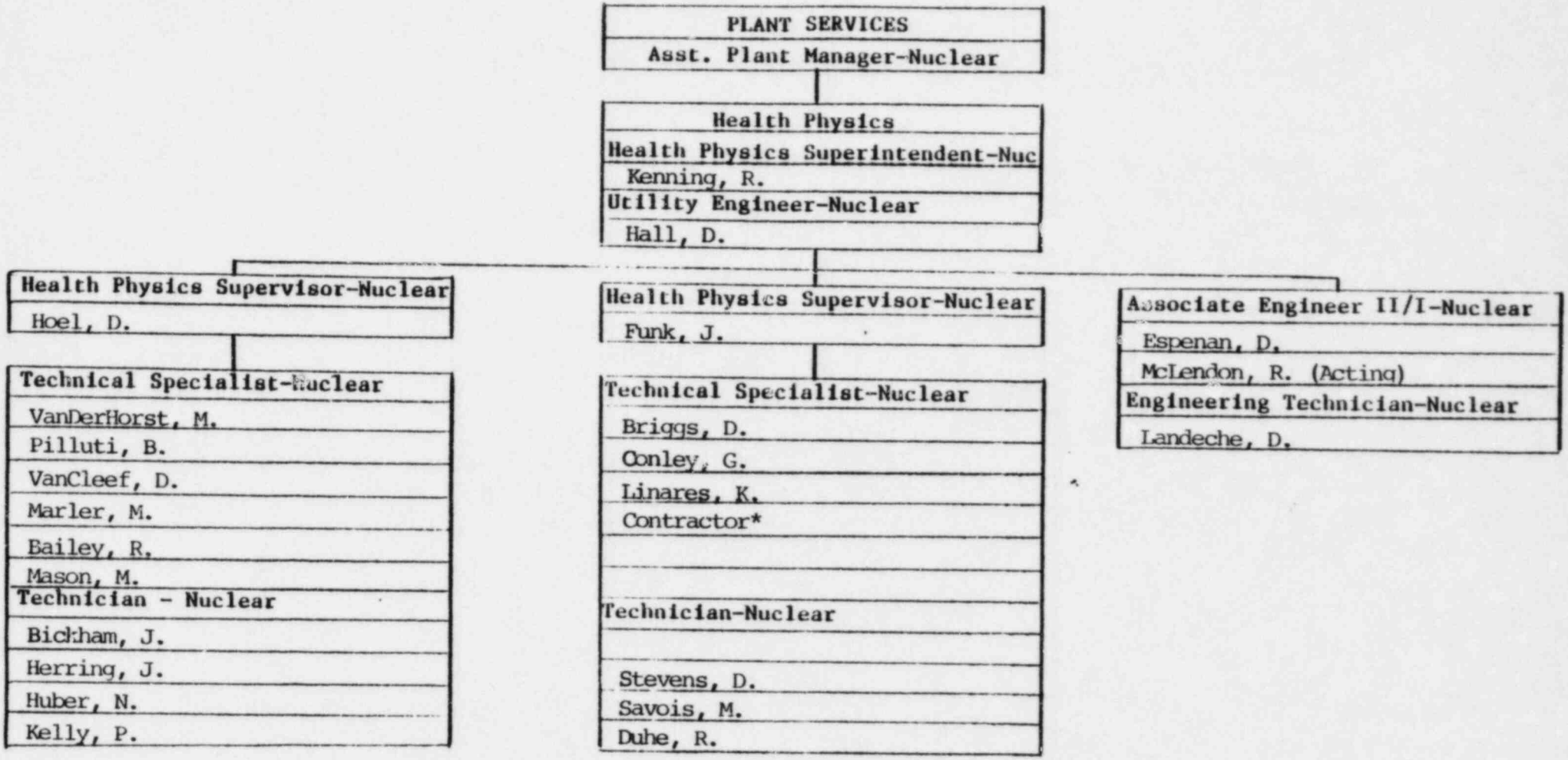

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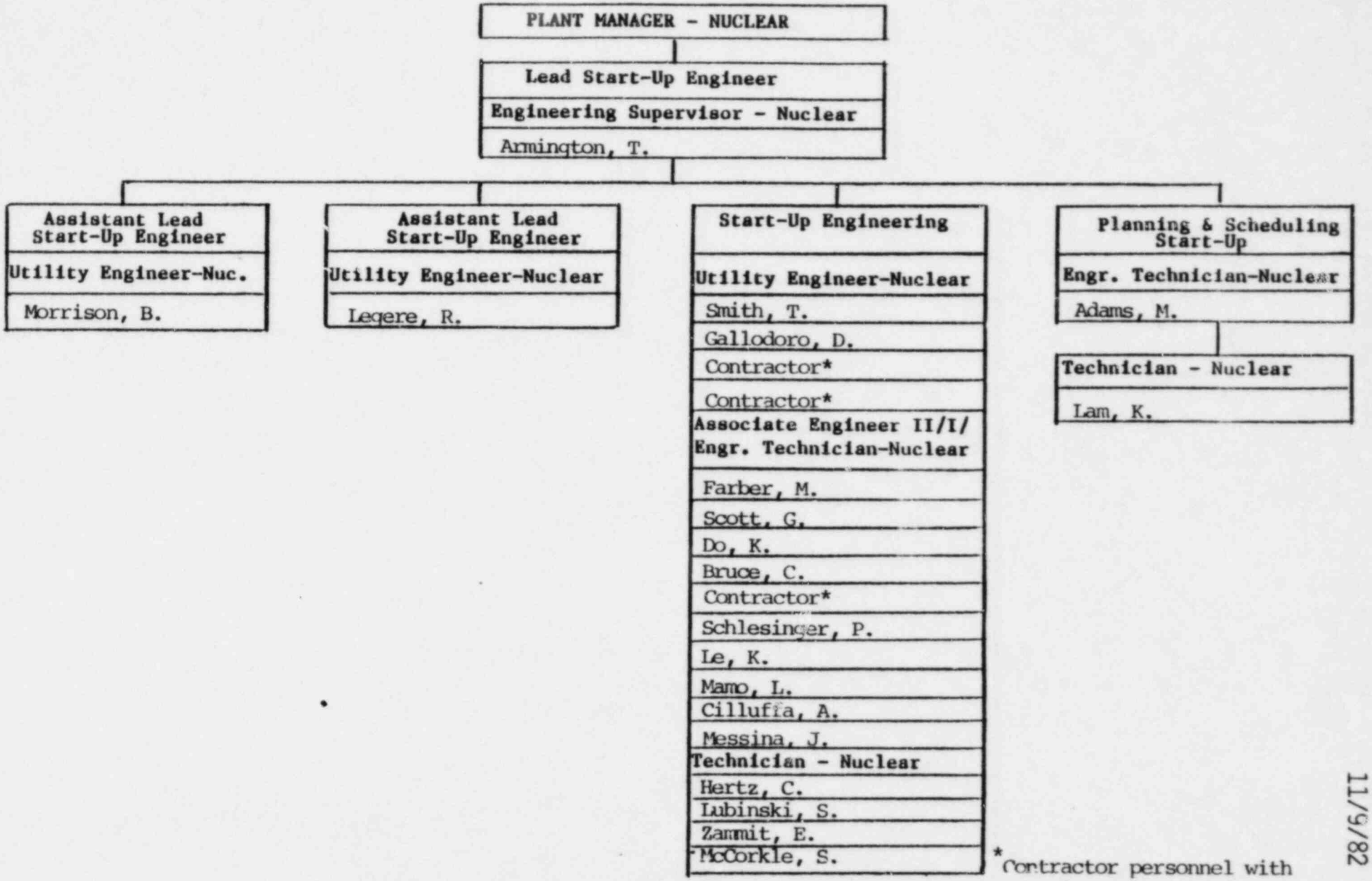

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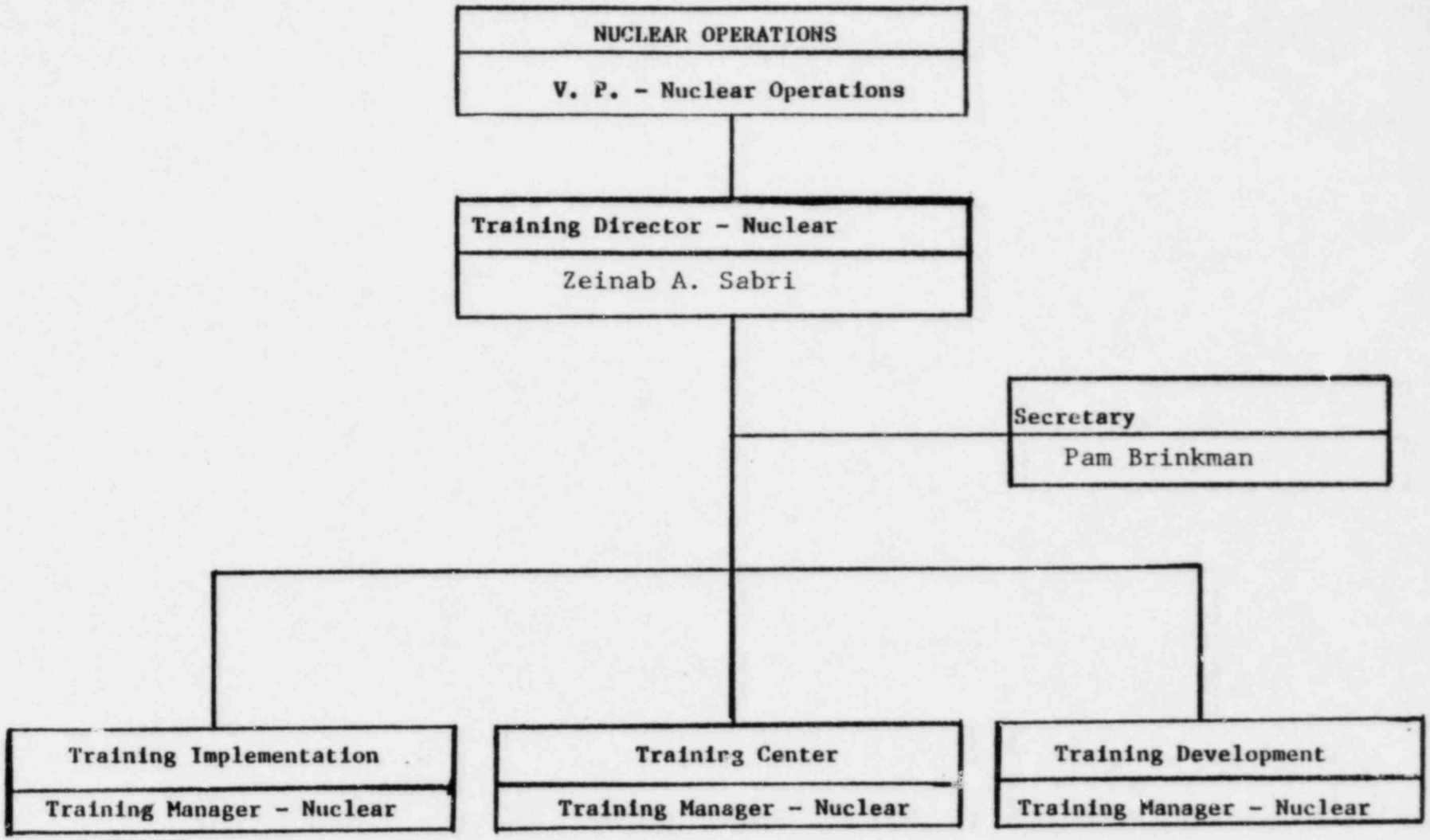
DBL-ACRS
11/9/82



ZAS-ACRS
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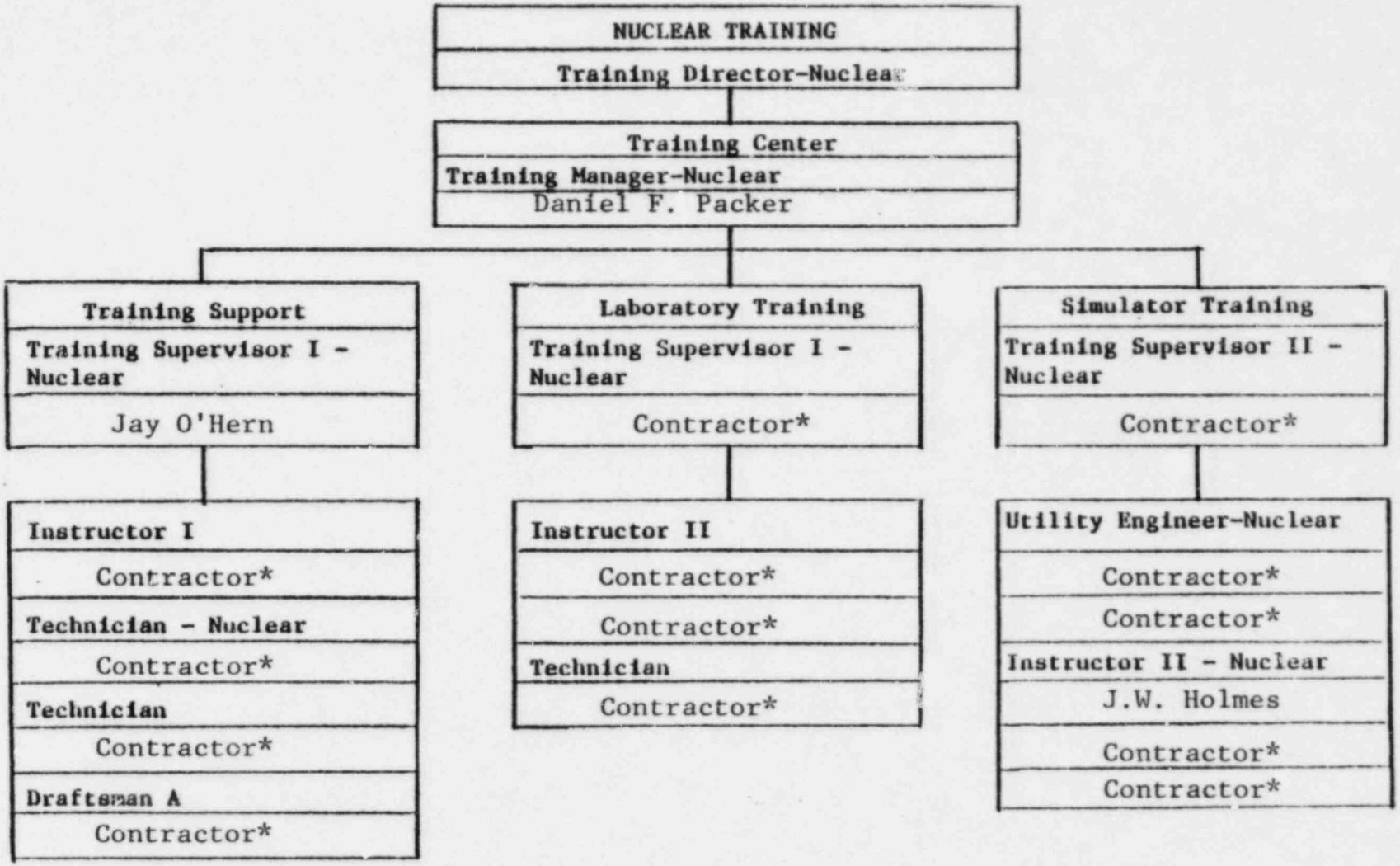
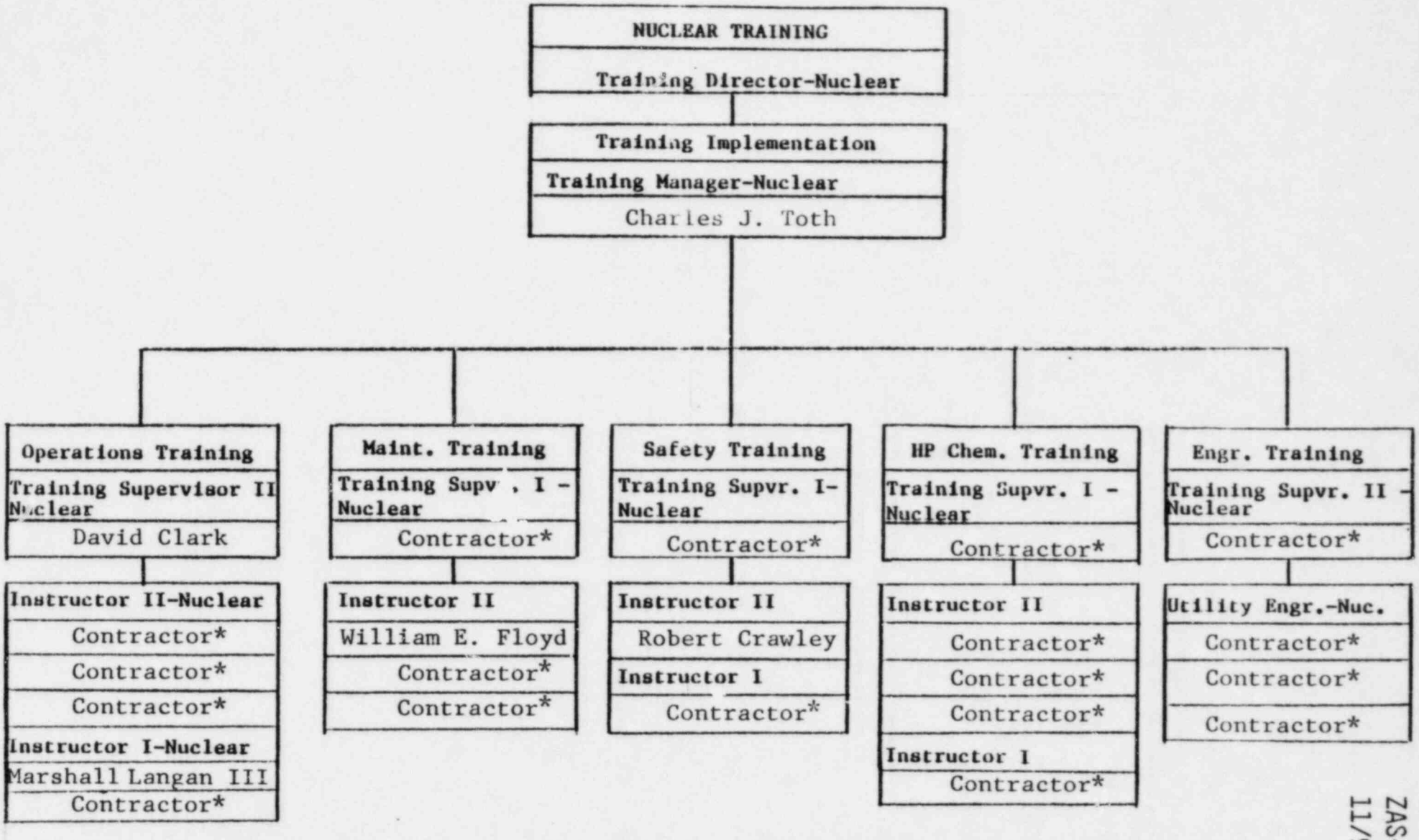


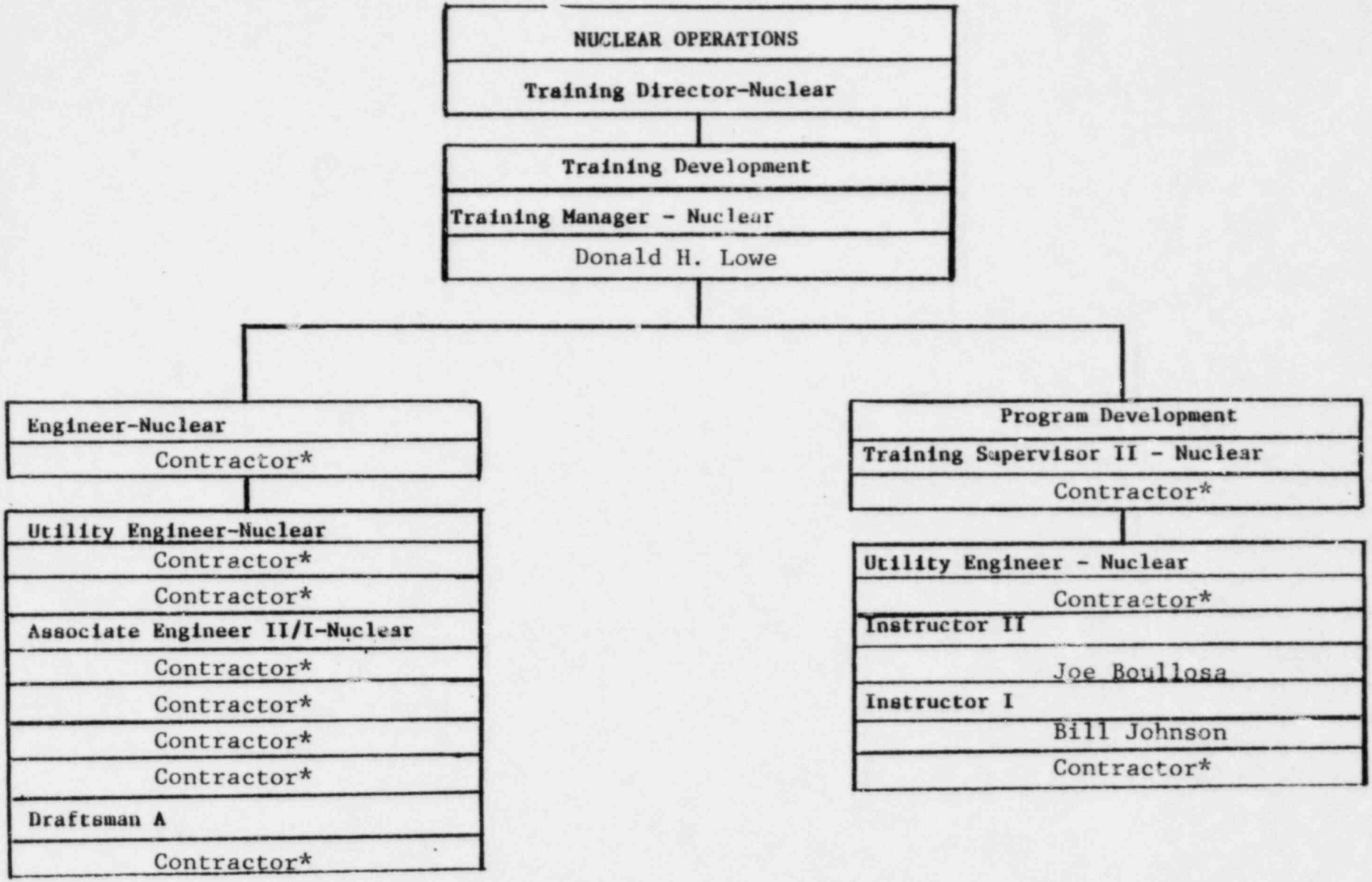
*Contractors with experience in specific areas are used to fill vacant slots

ZAS-ACRS
11/9/82



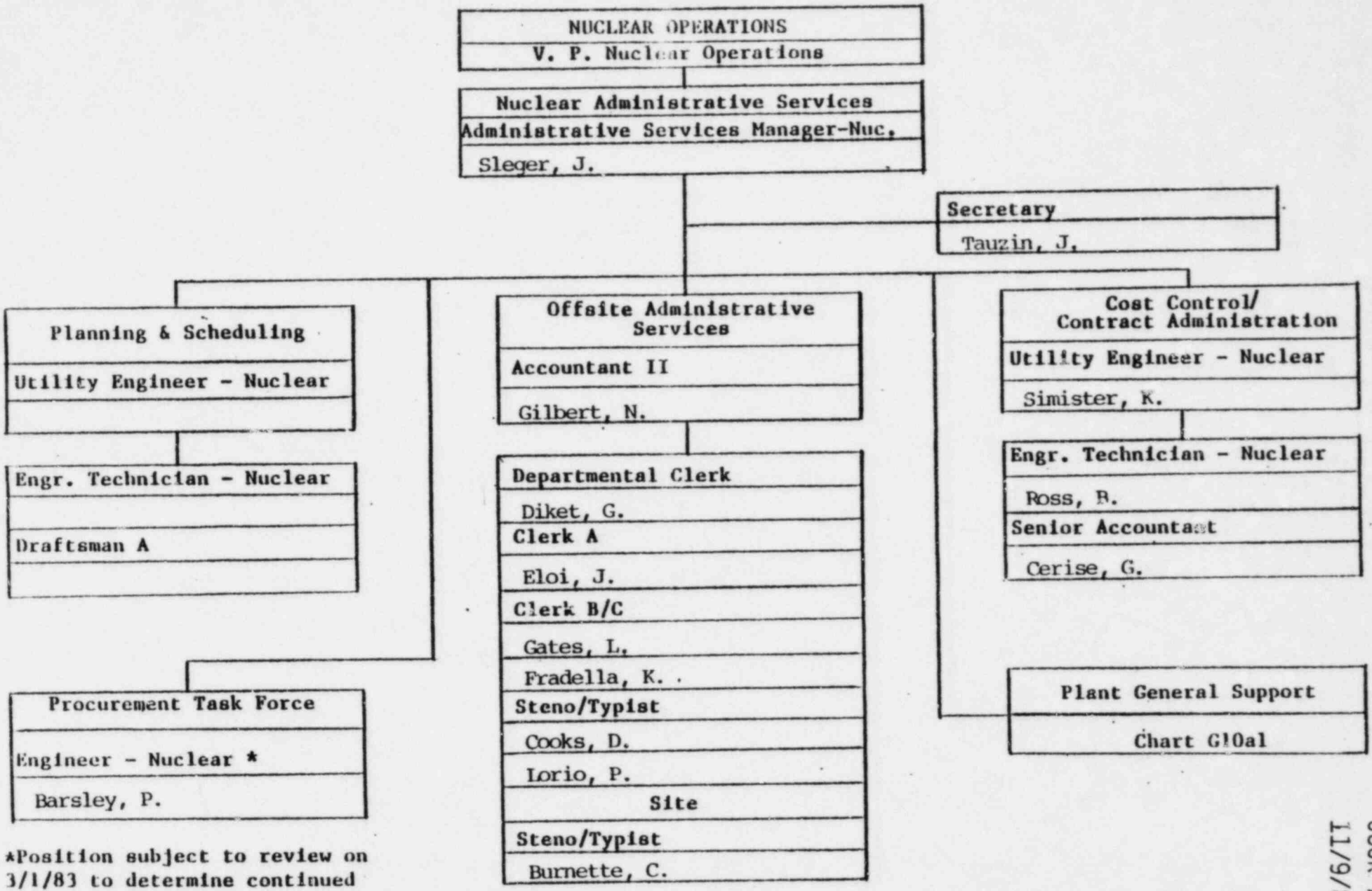
ZAS-ACRS
11/9/82

*CONTRACTORS WITH EXPERIENCE IN SPECIFIC AREAS ARE USED TO FILL VACANT SLOTS



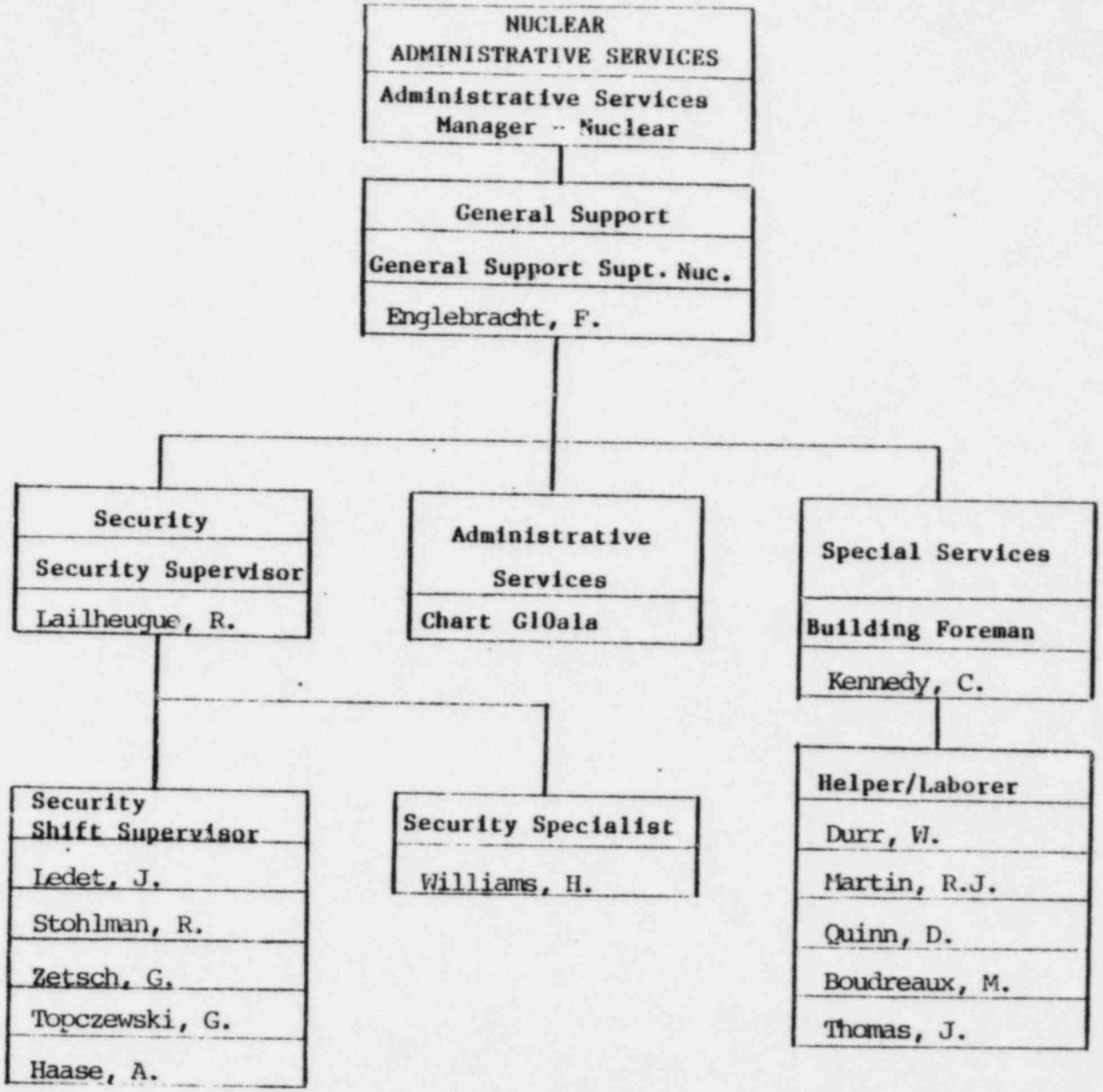
*CONTRACTORS WITH EXPERIENCE IN SPECIFIC AREAS ARE USED TO FILL VACANT SLOTS

ZAS-ACRS
11/9/82

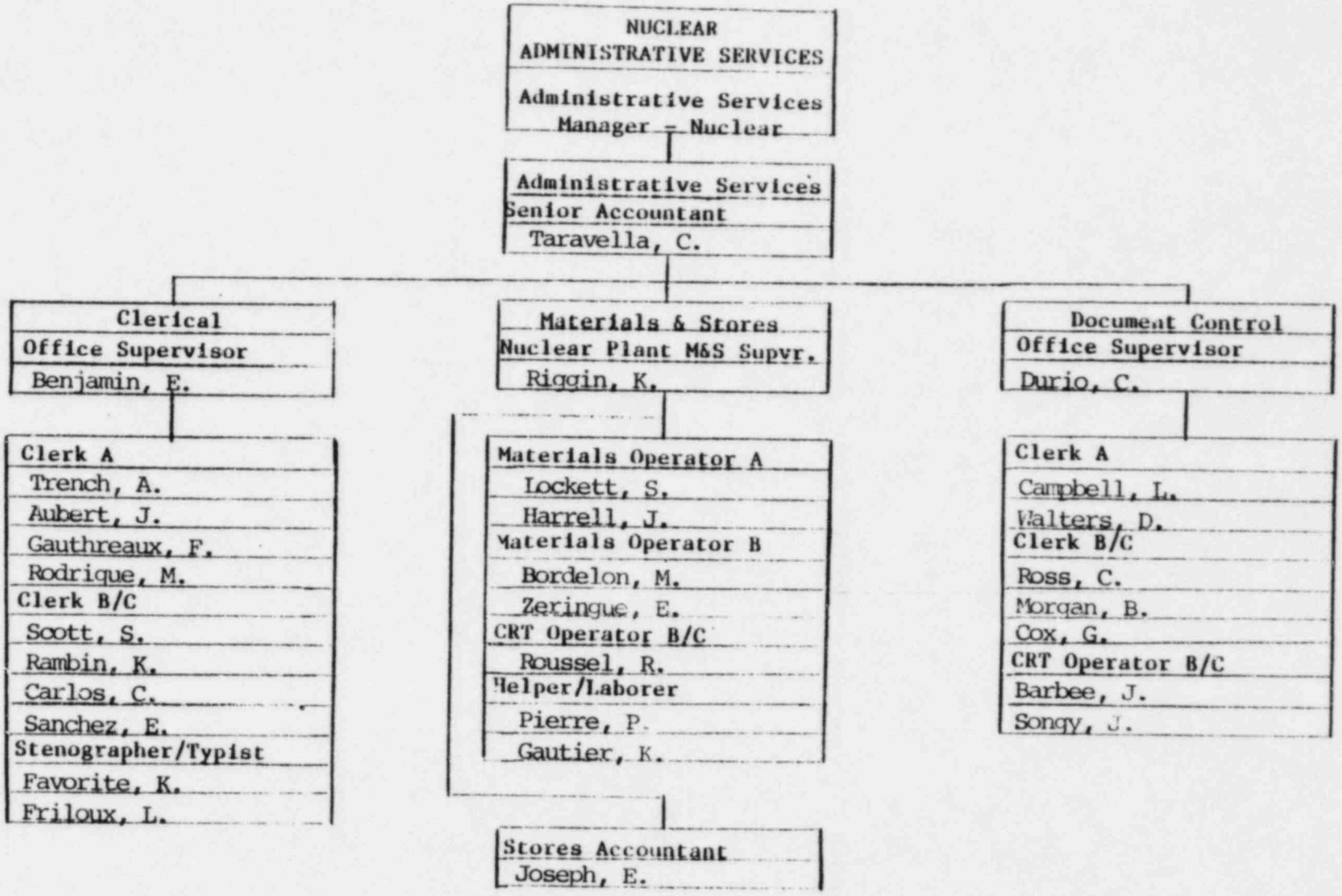


*Position subject to review on 3/1/83 to determine continued requirement.

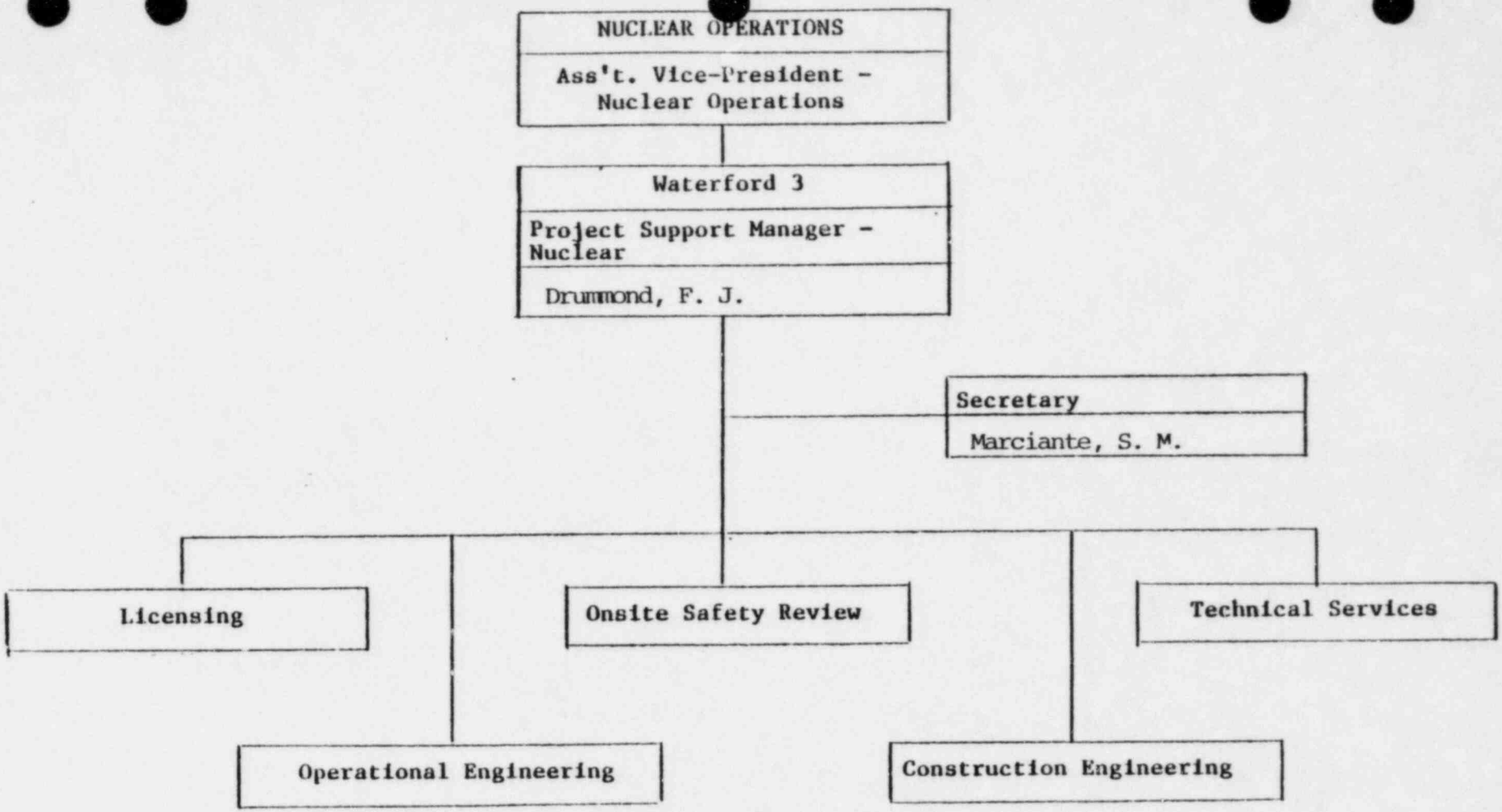
JSJR-ACRS
11/9/82



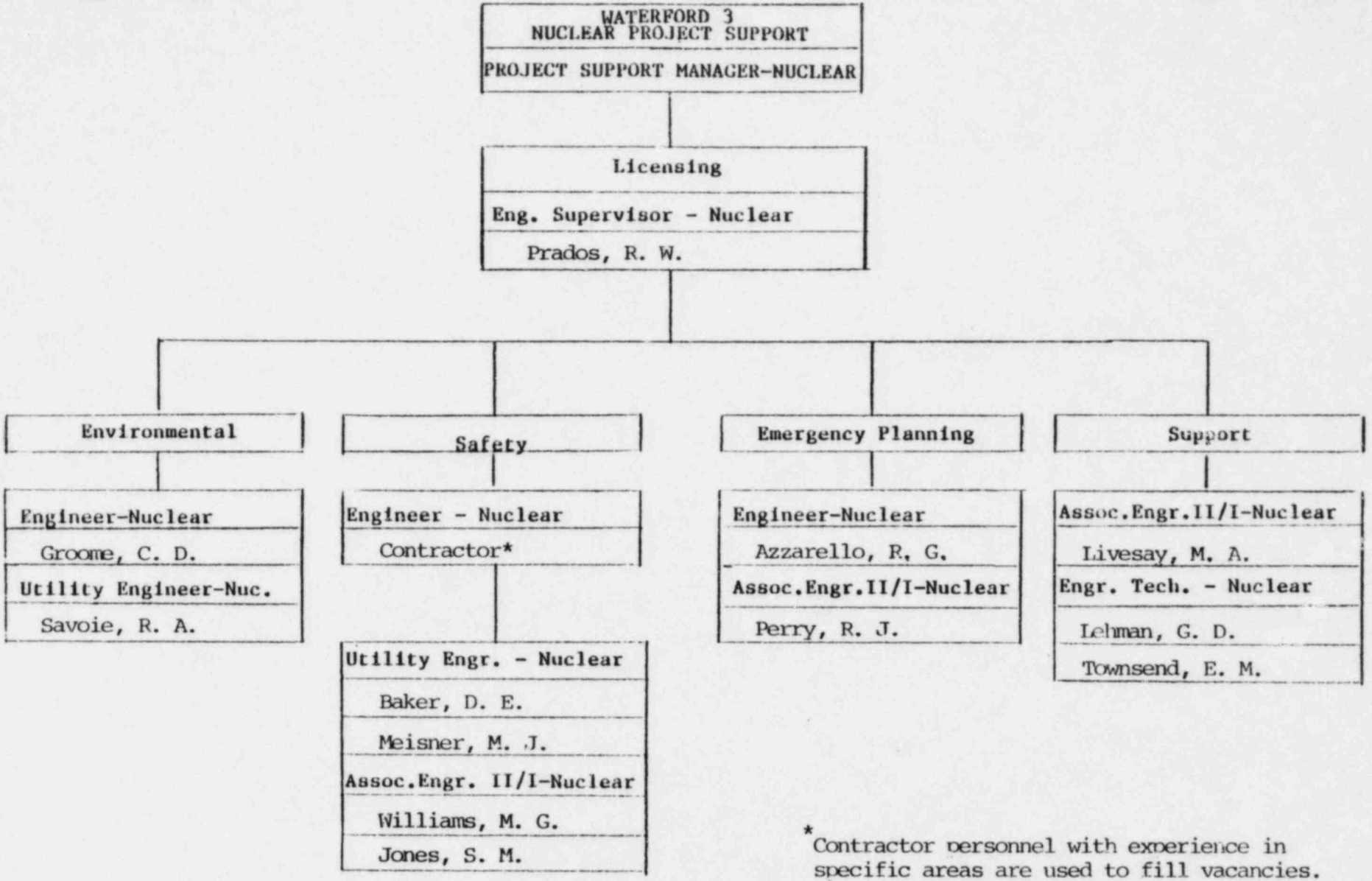
JSJR-ACRS
11/9/82


NUCLEAR
ADMINISTRATIVE SERVICES
Administrative Services Manager - Nuclear
Administrative Services
Senior Accountant
Taravella, C.
Clerical
Office Supervisor
Benjamin, E.
Clerk A
Trench, A.
Aubert, J.
Gauthreaux, F.
Rodrique, M.
Clerk B/C
Scott, S.
Rambin, K.
Carlos, C.
Sanchez, E.
Stenographer/Typist
Favorite, K.
Friloux, L.
Materials & Stores
Nuclear Plant M&S Supvr.
Riggin, K.
Materials Operator A
Lockett, S.
Harrell, J.
Materials Operator B
Bordelon, M.
Zeringue, E.
CRT Operator B/C
Roussel, R.
Helper/Laborer
Pierre, P.
Gautier, K.
Stores Accountant
Joseph, E.
Document Control
Office Supervisor
Durio, C.
Clerk A
Campbell, L.
Walters, D.
Clerk B/C
Ross, C.
Morgan, B.
Cox, G.
CRT Operator B/C
Barbee, J.
Songy, J.

JSJR
11/9/82

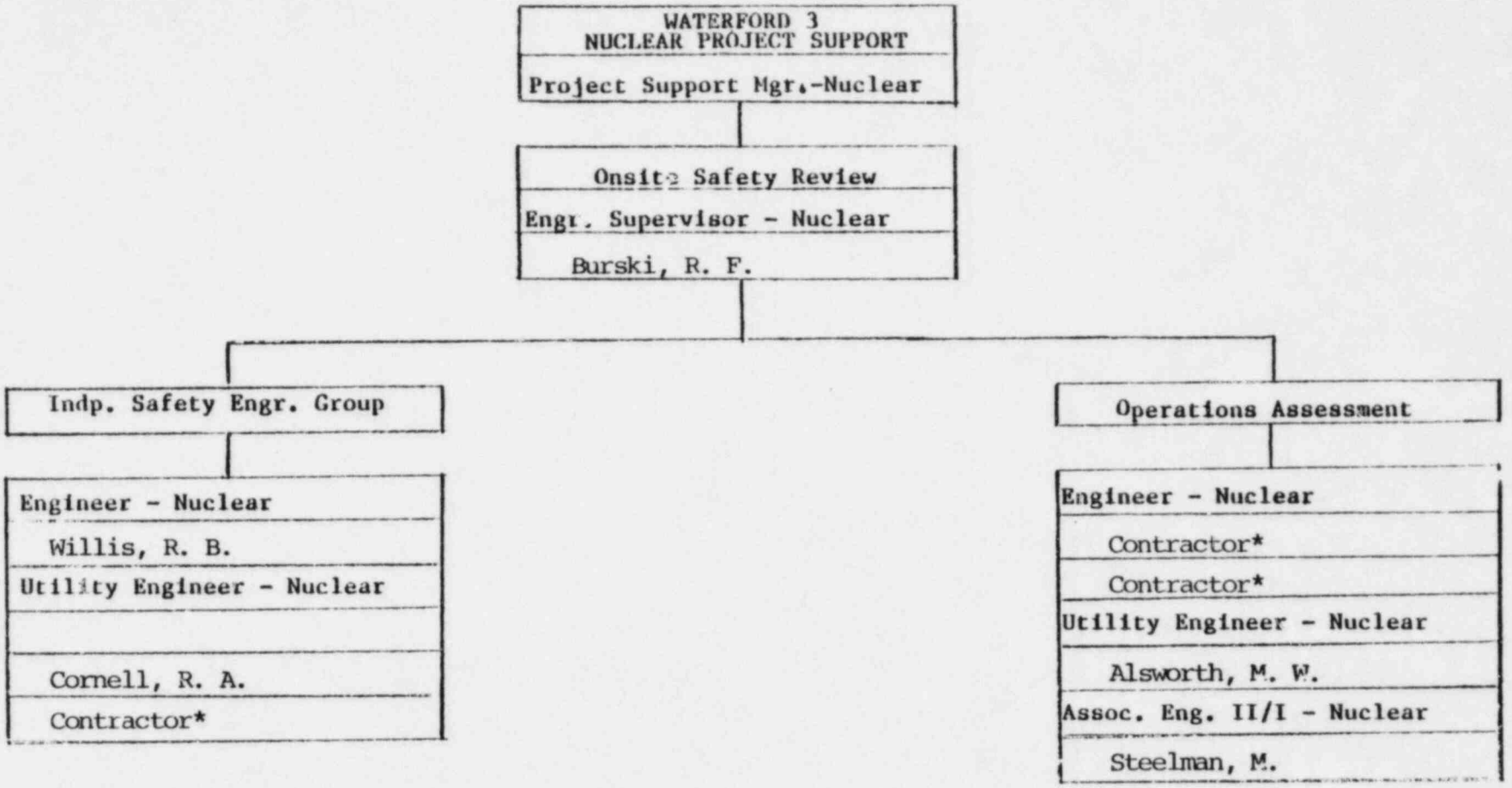


FJD-ACRS
11/9/82



*Contractor personnel with experience in specific areas are used to fill vacancies.

FJD-ACRS
11/9/82



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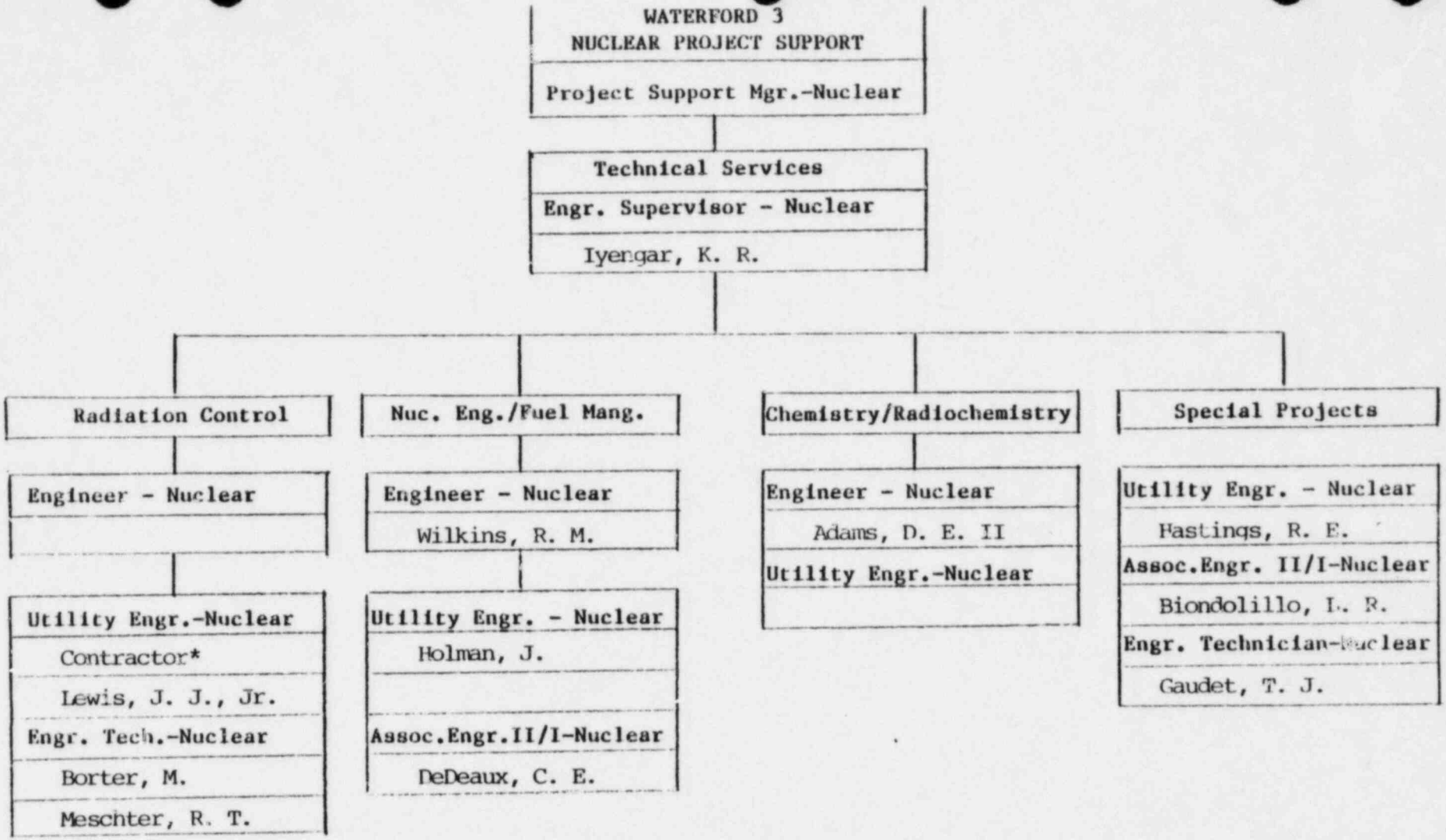
FJD-ACRS
11/9/82



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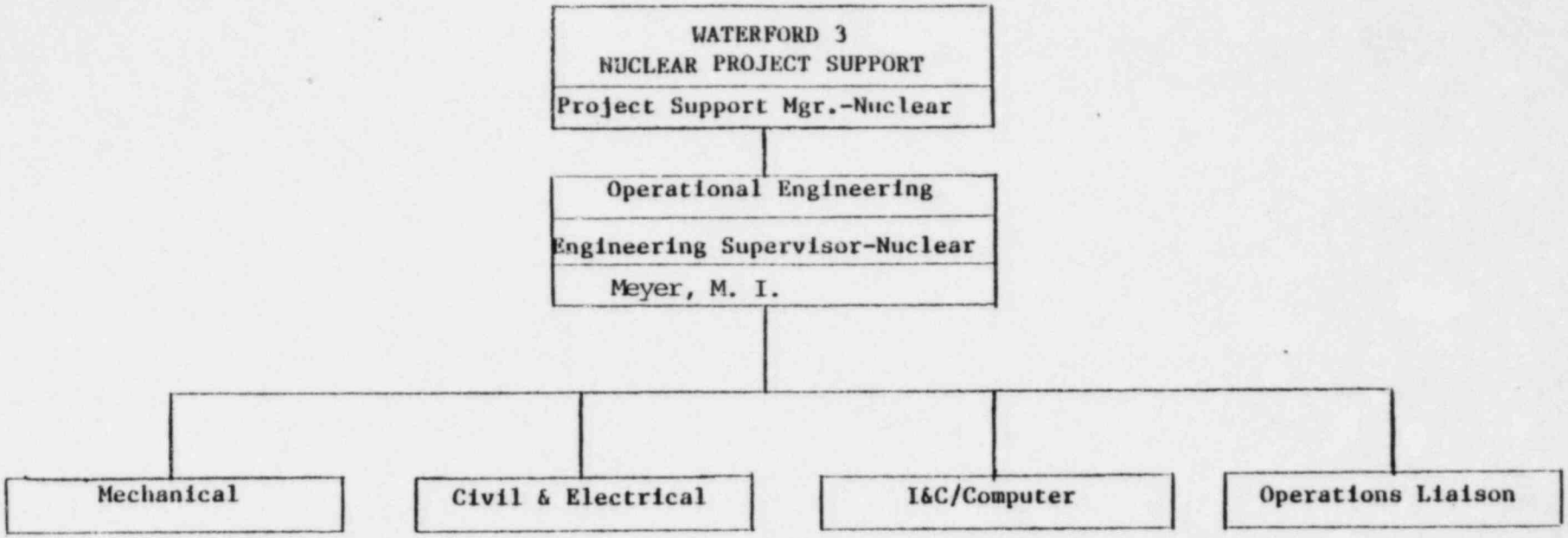
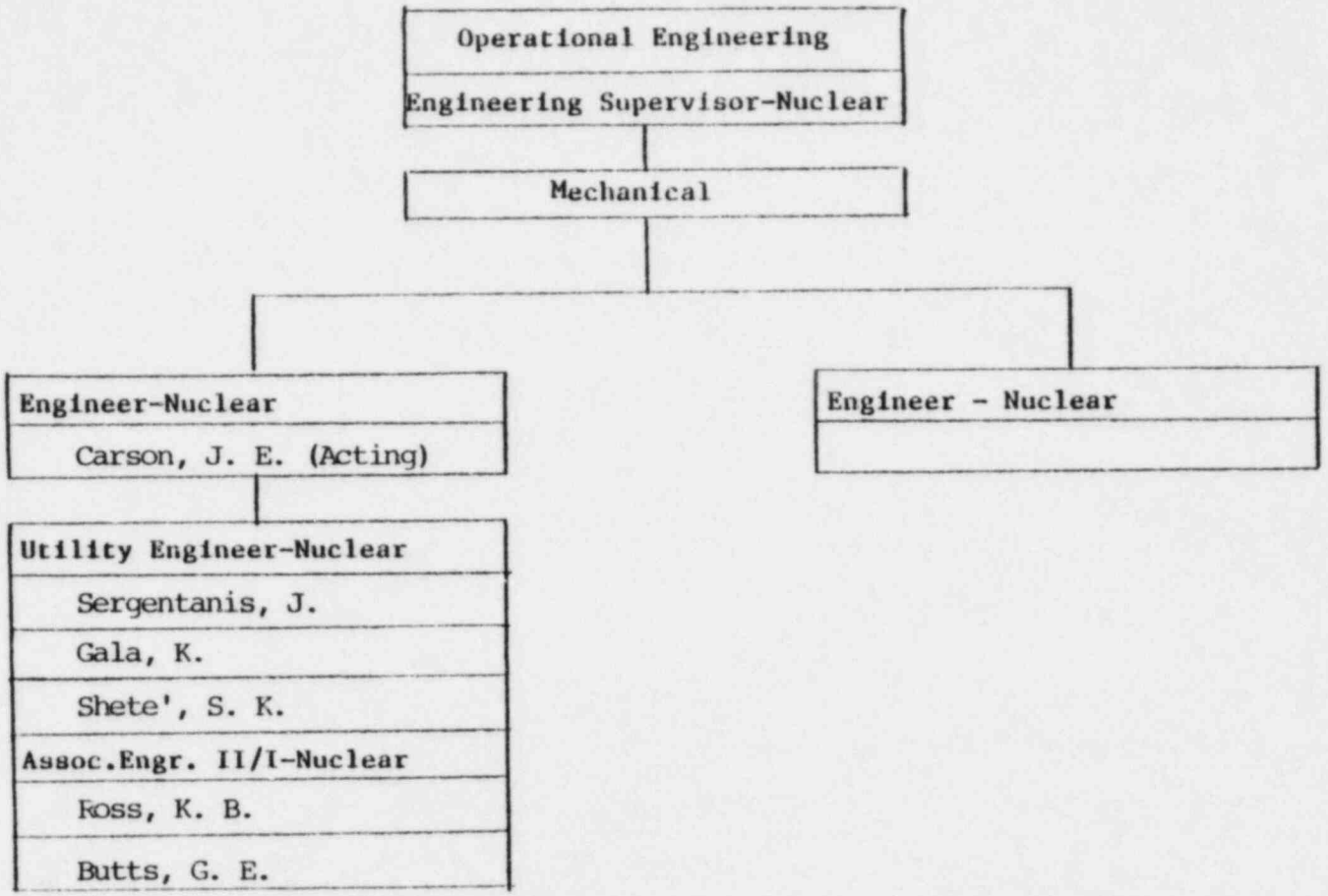
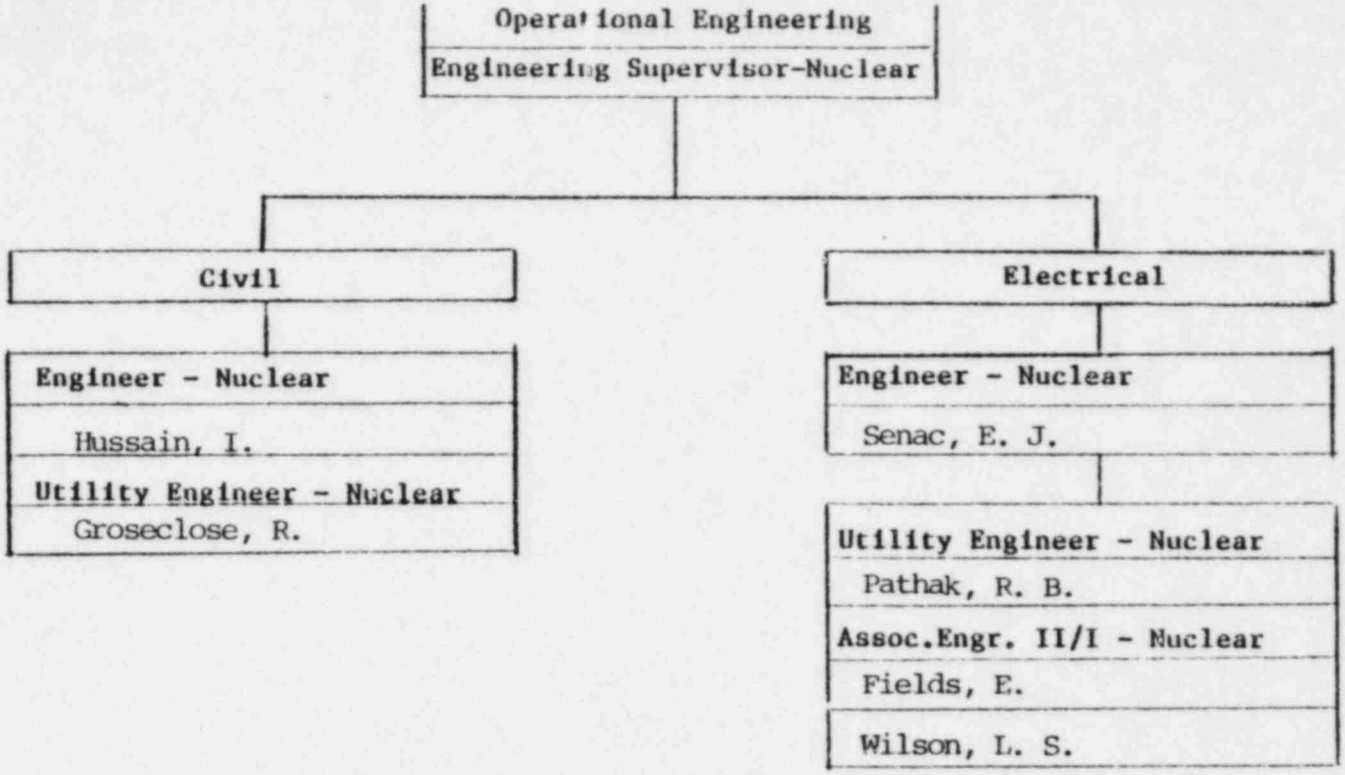
FJD-ACRS
11/9/82



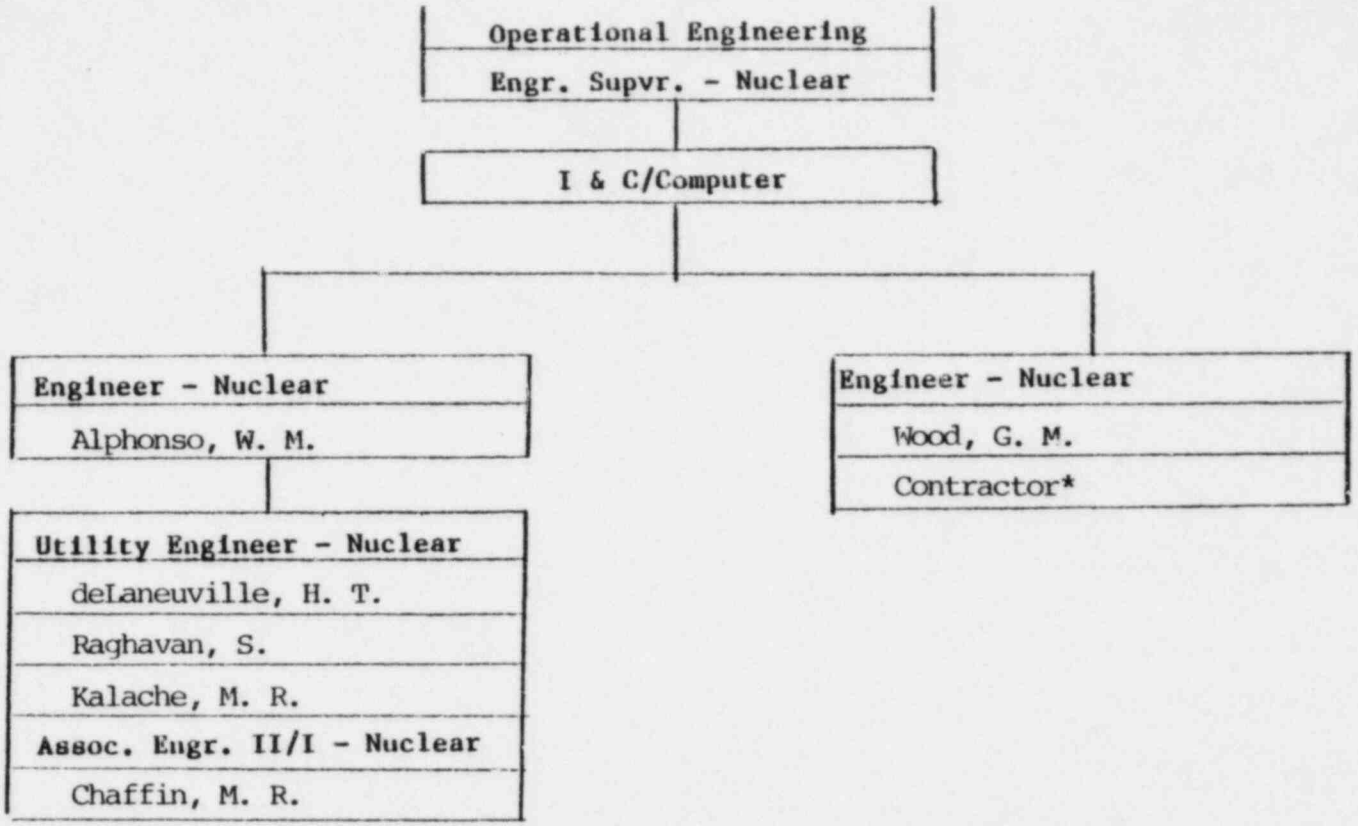
FJD-ACRS
11/9/82



FJD-ACRS
11/9/82



FJD-ACRS
11/9/82



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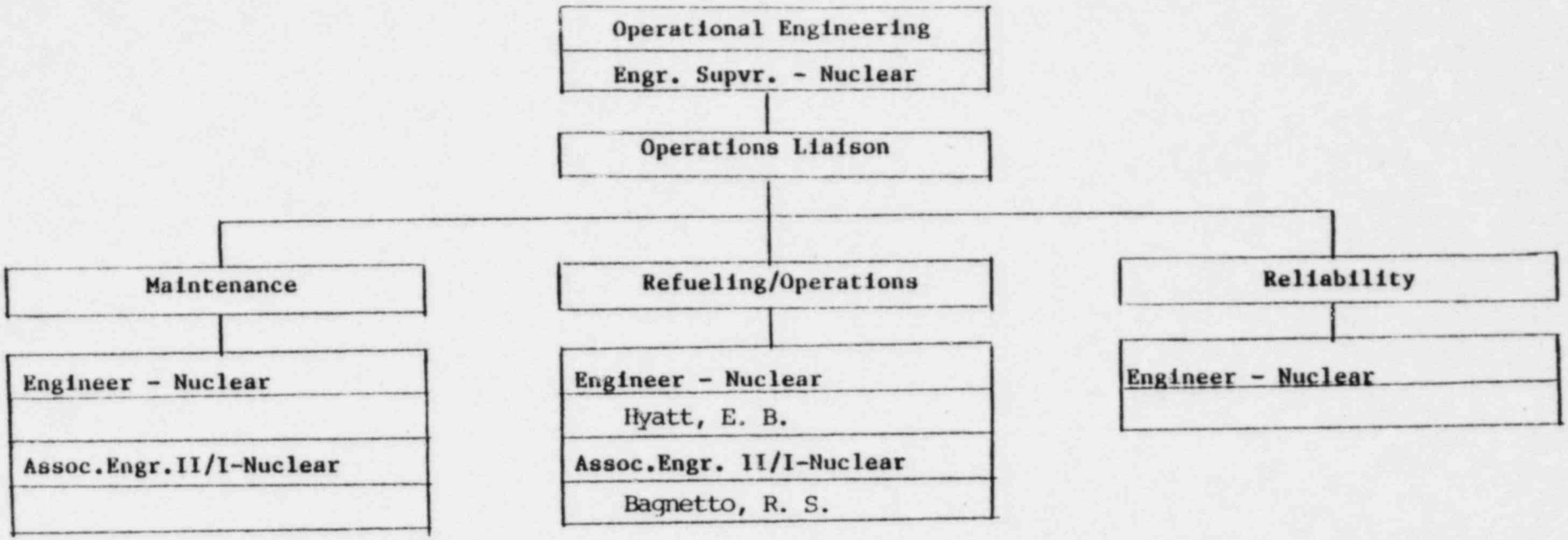
FJD-ACRS
11/9/82



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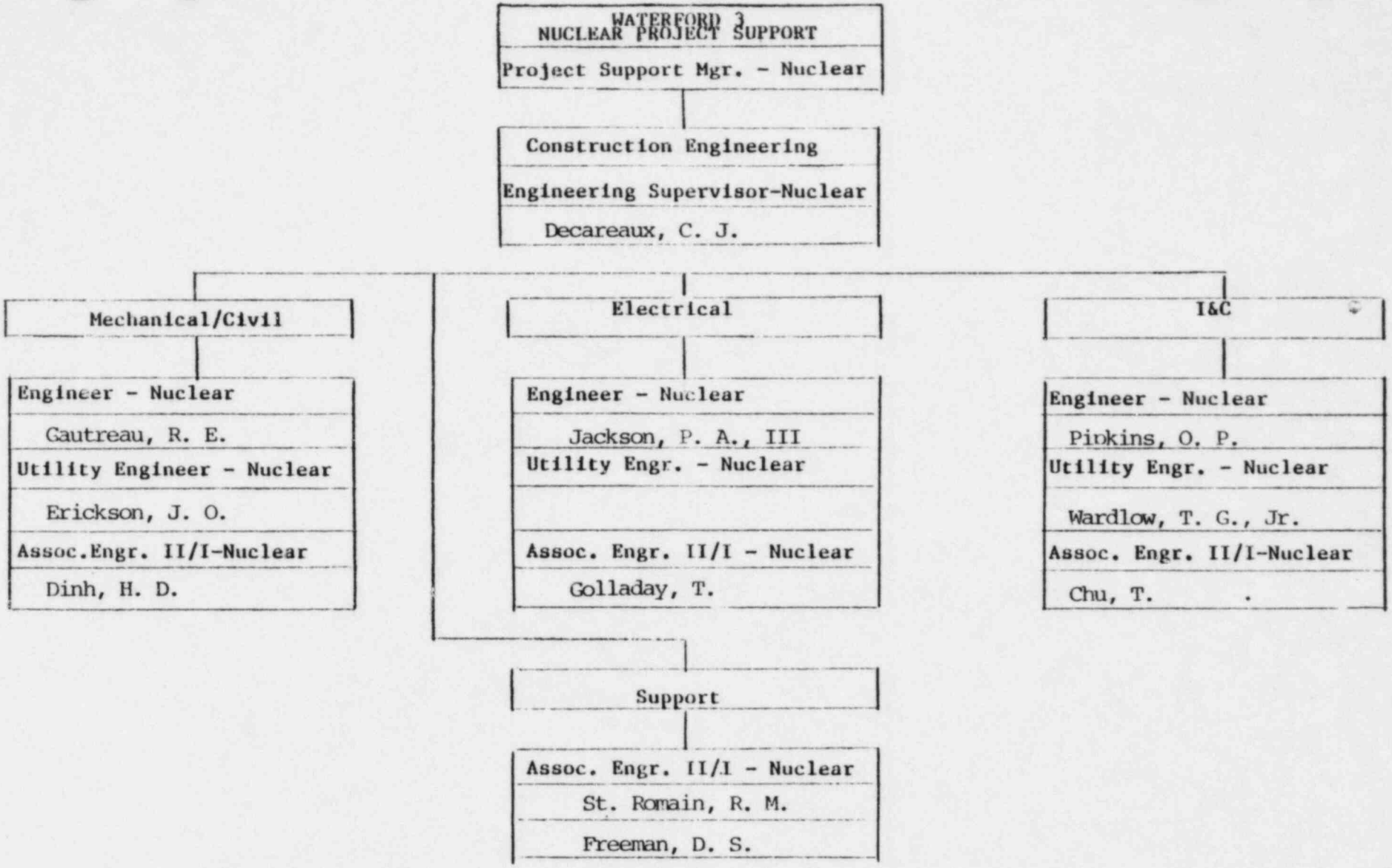
11/9/82



FJD-ACRS
11/9/82

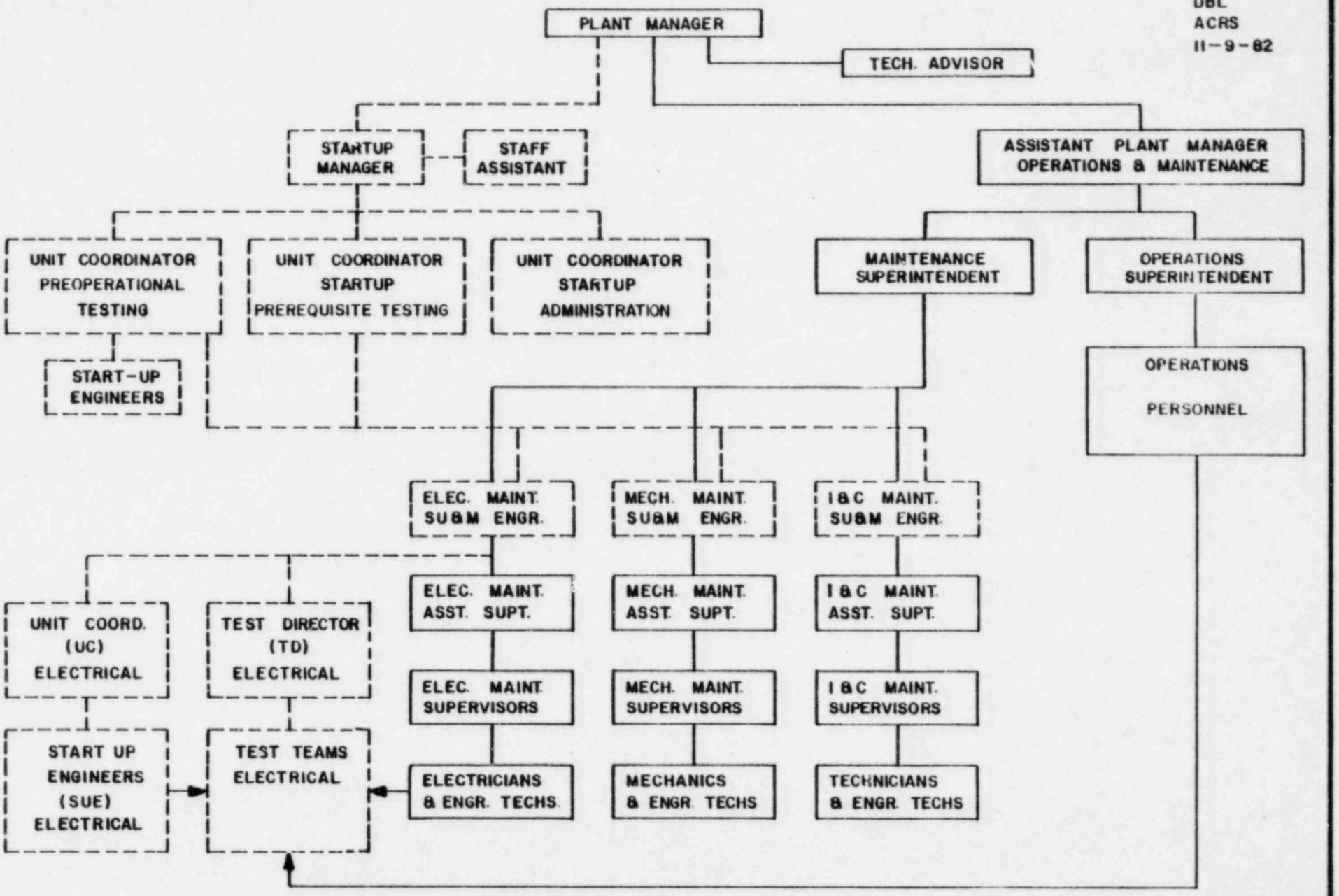
DBL-ACRS
11/9/82

AGENDA

- STATUS OF STAFFING
  - INTEGRATION OF CONTRACTOR EMPLOYEES IN STARTUP AND TESTING ORGANIZATIONS — D.B. LESTER
  - PLANT STAFF INVOLVEMENT — D.B. LESTER

LP&L PREREQUISITE & PREOPERATIONAL TEST ORGANIZATION

DBL
ACRS
11-9-82



LP&L INTEGRATED TESTING ORGANIZATION

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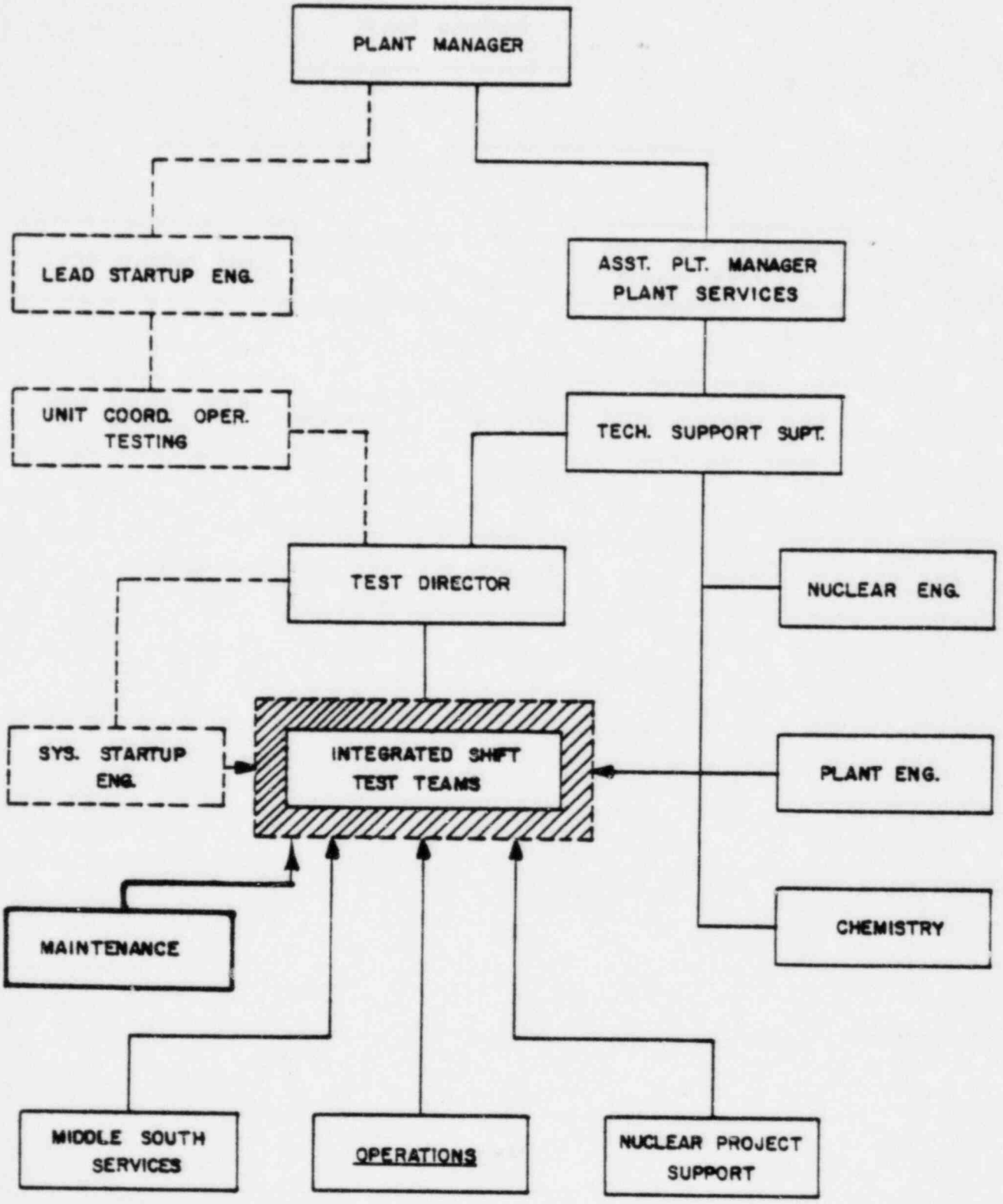
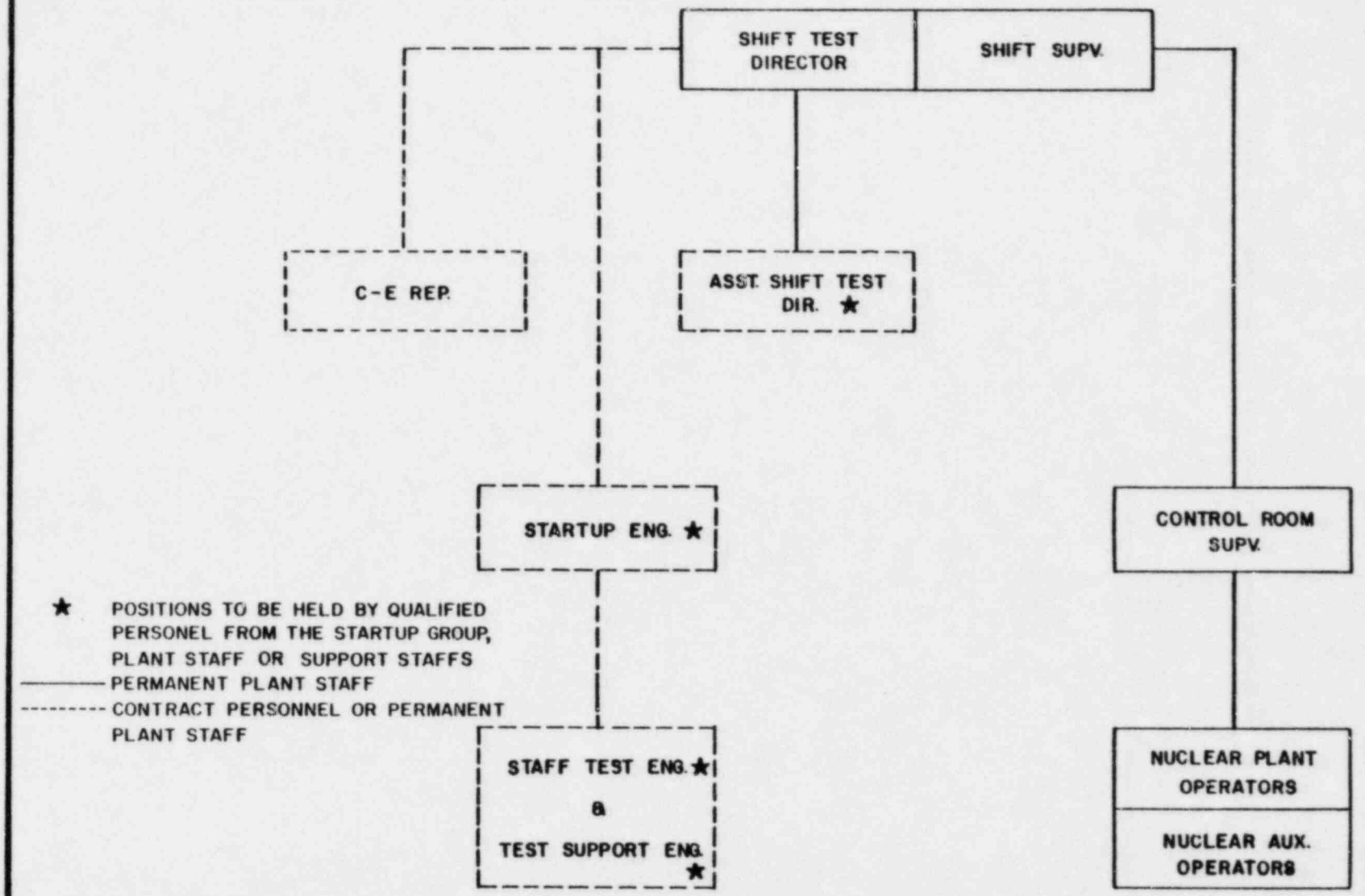
ACRS
11-9-82



SHIFT TEST TEAM INTEGRATED TESTS

DBL
ACRS
11-9-82



COMMERCIAL OPERATION SHIFT ORGANIZATION

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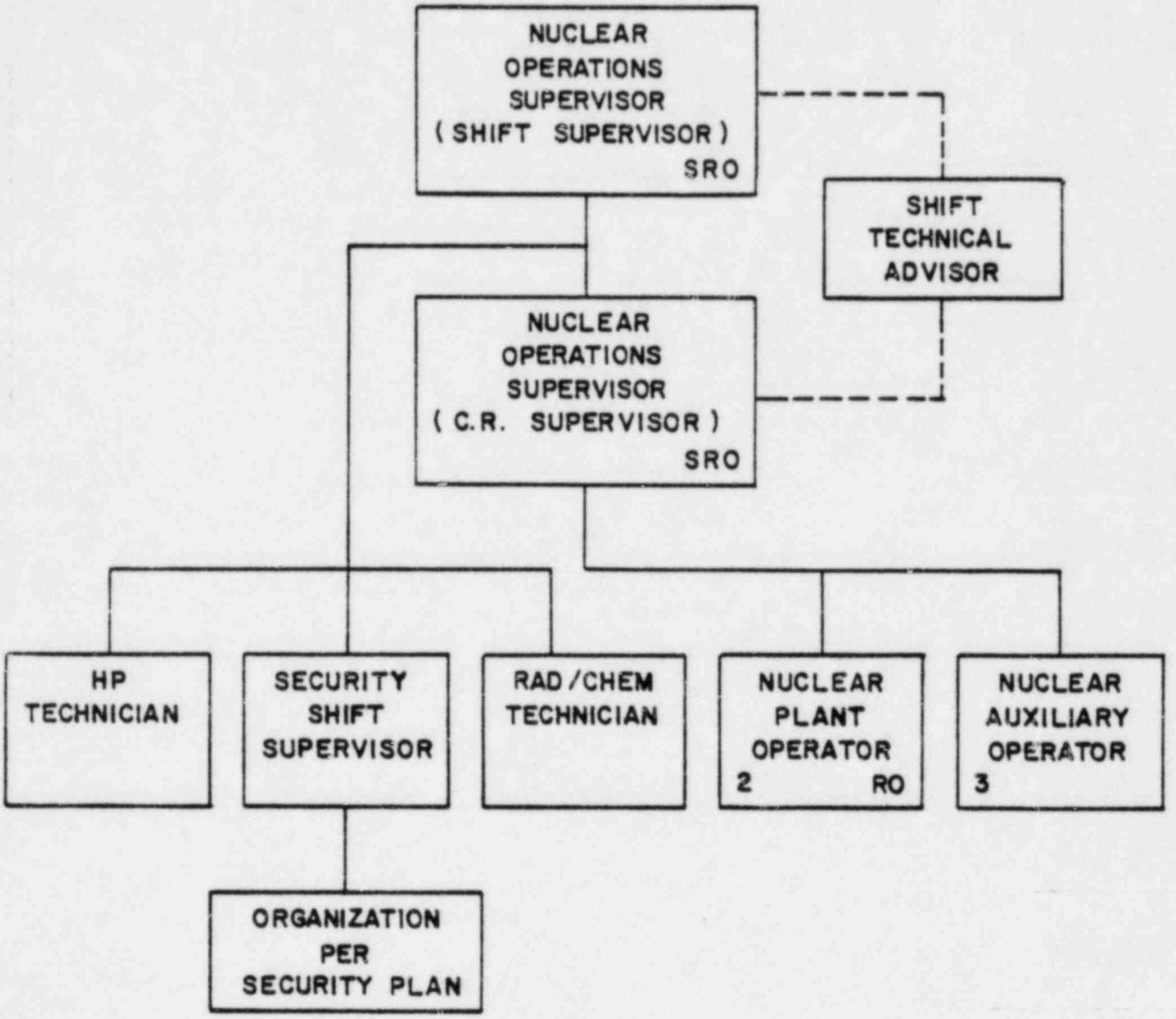
ACRS
11-9-82



LEGEND:
SRO - SENIOR REACTOR OPERATOR
RO - REACTOR OPERATOR

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ON-GOING LP&L STAFF PARTICIPATION

- OPERATIONS
- MAINTENANCE
- QUALITY CONTROL
- CHEMISTRY
- PLANT ENGINEERING
- SECURITY
- OTHERS

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PRE-CORE HOT FUNCTIONAL TESTING PARTICIPATION PLAN

- PLAN
  - TEST DIRECTOR - PLAN COORDINATOR
  - BASED ON HFT SCHEDULE
  - DIRECT PLANT MANAGEMENT PLAN
  - EACH GROUP/DEPARTMENT PLAN
- PERSONNEL PARTICIPATION
  - MAXIMUM PARTICIPATION BY LP&L PERSONNEL
  - INTEGRATED TEAM APPROACH
  - IMPLEMENT & VERIFY DEPARTMENT PROGRAMS & PROCEDURES
  - PLANNED TRAINING & QUALIFICATION SIGN-OFFS
  - PLANNED OBSERVATIONS
- COMMUNICATIONS
  - 24 HOUR/DAY CONTINUITY - ALL LEVELS
  - PRE-TEST BRIEFINGS
  - PRE-SHIFT BRIEFINGS
  - PLAN-OF-THE-DAY MEETINGS
  - DEPARTMENT BRIEFINGS
- EQUIPMENT CHECKOUT
  - SPECIAL PLANT TOOLS
  - DEPARTMENT EQUIPMENT
  - DEPARTMENT TOOLS/AIDS
  - PLANNING & SCHEDULING TOOLS/METHODS

CONTRACT SERVICES

- CONSTRUCTION CONTRACT - EBASCO
- GENERAL SERVICES AGREEMENTS
  - COMBUSTION ENGINEERING
  - WESTINGHOUSE
- CONSULTING AGREEMENTS (11)
  - QUADREX
  - EDS - NUCLEAR
  - EXXON NUCLEAR
  - GENERAL PHYSICS
  - UNITED ENERGY SERVICES
  - TERA
  - NUCLEAR ENERGY SERVICES
- PERSONNEL CONTRACTS
  - 46 CONTRACTS
- MAINTENANCE CONTRACT
  - REQUEST FOR BIDS TO BE ISSUED IN NOVEMBER 1982

DBL-ACRS
11/09/82

PROJECTED CONTRACT ASSISTANCE

	PRESENT*	THROUGH FUEL LOAD	THROUGH COM. OPER.
PLANT STAFF			
OPERATIONS	14	14	4
MECHANICAL MAINT.	134	18	10
ELECTRICAL MAINT.	152	32	5
I&C MAINT.	101	42	11
STARTUP	172	103	52
QUALITY CONTROL	10	6	4
HEALTH PHYSICS	3	0	0
TECHNICAL SUPPORT	94	94	41
SUBTOTAL	680	309	127
NUCLEAR OPERATIONS DEPARTMENT			
MANAGEMENT	3	3	1
TRAINING	36	36	18
NPSG	15	12	7
ADMIN. SERVICES	150	150	75
SUBTOTAL	204	201	101
QUALITY ASSURANCE	2	24	0
TOTAL	886	534	228

* AS OF 11/1/82

ZAS-ACRS
11/9/82

AGENDA

- OPERATOR TRAINING PROGRAM
  - PROGRESS IN MEETING TRAINING PROGRAM OBJECTIVES — Z.A. SABRI
  - STATUS OF TRAINING PERSONNEL VS. SCHEDULED NEEDS — Z.A. SABRI
  - FEEDBACK OF INDUSTRY EXPERIENCE TO TRAINING PROGRAM — Z.A. SABRI
  - DESCRIPTION OF SIMULATOR TRAINING
    - ONSITE SIMULATOR INSTALLATION SCHEDULE — Z.A. SABRI
    - ACCIDENTS AND ABNORMAL OCCURRENCES INCLUDED IN SIMULATOR TRAINING — Z.A. SABRI
  - HOW ARE INDUSTRY RELATED EVENTS FACTORED INTO THE SIMULATOR TRAINING (FUTURE) — Z.A. SABRI
  - WILL THERE BE AN SPDS WITH THE ONSITE SIMULATOR — Z.A. SABRI

ZAS-ACRS
11/9/82

OBJECTIVES OF OPERATOR TRAINING PROGRAM

- ENSURE THAT SUFFICIENT AND ADEQUATELY TRAINED OPERATORS EXIST ON A CONTINUOUS BASIS TO MEET LP&L STAFFING NEEDS
  - 47 COLD LICENSE CANDIDATES (38 OPERATORS)
  - 24 PERSPECTIVE HOT LICENSE CANDIDATES
  - EVALUATIONS OF BOTH TRAINING PROGRAMS BY NRC AND INPO (NAO, RO, SRO)

- EMPHASIZE AREAS MOST CONTRIBUTING TO RISK (SAFETY AND FINANCIAL) TO OPTIMIZE THE UTILIZATION OF TRAINEES' TIME
  - SYNTHESIS OF U.S. PAST OPERATION LER EXPERIENCE
  - FEEDBACK FROM CURRENT SIGNIFICANT NUCLEAR EVENTS (OSRG/INPO)
  - PLANT SPECIFICS APPLICATION
  - INTERFACE WITH SRC/PORC

- MINIMIZE THE PROBABILITY OF OUTAGE AND EQUIPMENT MAL-FUNCTIONS/DAMAGE DUE TO PERSONNEL ERRORS
  - NPRDS
  - SYNTHESIS OF PAST OPERATION EVENTS
  - PLANT SPECIFICS APPLICATIONS

- EMPHASIZE INTERFACES WITH OTHER PLANT AND NPSG PERSONNEL
  - H.P., M&T, CHEM., ETC.

- MEET REGULATORY/INPO REQUIREMENTS
  - COMPLETED ELEMENTS OF REQUIRED LICENSED OPERATOR TRAINING PROGRAM
  - INPO GUIDELINES - ACCREDITATION
  - INSTRUCTOR CERTIFICATION

OBJECTIVES OF OPERATOR TRAINING PROGRAM (CONT'D)

- CLOSELY EVALUATE TRAINEES' PROGRESS TO ASSURE THAT AREAS THAT NEED MORE EMPHASIS ARE ADDRESSED FOR INDIVIDUAL CANDIDATES AND THE TOTAL LICENSEE CANDIDATE GROUP
  - ORAL AND WRITTEN EXAMS BY LP&L
  - ORAL AND WRITTEN BY OUTSIDE CONSULTANTS
- COMPLETE STAFFING OF CENTRALIZED TRAINING ORGANIZATION WITH QUALIFIED PERSONNEL

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11/9/82

STATUS OF OPERATOR TRAINING

- ACADEMIC SECTIONS ESSENTIALLY COMPLETED

- RECENT EVALUATION OF PROGRAM
  - HOLMAN PROGRESS EVALUATION OF AUGUST, 1982
    - "THE EXAMINATIONS WERE GRADED VERY CONSERVATIVELY"
    - "WE HAVE PRESENTED YOU WITH THE WORSE CASE RESULTS"
    - "EXAMINATIONS WERE CONDUCTED AT THE SRO LEVEL"
    - "CONFIDENCE THAT THEY (OPERATORS) CAN OBTAIN REQUISITE LEVEL OF KNOWLEDGE FOR NRC LICENSES IN THE TIME REMAINING"
    - "THIS IS A VERY CAPABLE GROUP"
    - NINE (9) INDIVIDUALS PASSED ON THE RO LEVEL
    - NO ONE PASSED ON THE SRO LEVEL

  - NRC AUDIT WEEK OF OCTOBER 4, 1982
    - WEAKNESSES IDENTIFIED
      - PHYSICAL PLANT
      - PROCEDURES
      - LP&L INVOLVEMENT
      - MANAGEMENT TRAINING

- CORRECTIVE ACTIONS
  - QUALIFICATION CARDS
  - QUALIFICATION CARD TRAINING CONTROL AND TRACKING MATRIX
  - ADDITIONAL CONTACT TIME IN PLANT SCHEDULED
  - RIGID SUPERVISION
  - IMPROVED COMMUNICATIONS WITH OPERATORS
  - MONTHLY HOLMAN EVALUATION
  - PLANT STAFF INVOLVEMENT IN STARTUP OPERATIONS
  - DEDICATED TRAINING FOR S.A. ALLEMAN AND G.R. PEELER

- NRC EXAM APRIL, 1983

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11/9/82

COLD LICENSE TRAINING PROGRAM

TITLE	DESCRIPTION	HOURS (APPROX.)	PROJECTED COMPLETION DATE
RESEARCH REACTOR	REACTOR PHYSICS AND OPS.	120	COMPLETE
OBSERVATION	PLANT OPERATION	400	COMPLETE
ACADEMIC REFRESHER	MATH, PHYSICS	160	COMPLETE
NUS/NUCLEAR ENERGY TECH	NUCLEAR FUNDAMENTALS	240	COMPLETE
ADVANCED THEORY	HEAT TRANSFER, THERMO FLUID MECHANICS, CHEM, ELECT.	200	COMPLETE
BEHAVIORAL SCIENCE	COMMUNICATIONS LEADERSHIP PSYCHOLOGICAL ASSESS-MENT	40	COMPLETE
FIRE BRIGADE	FIRE FIGHTING APPENDIX R	180	COMPLETE
HEALTH PHYSICS	HEALTH PHYSICS GET	40	COMPLETE FOR 50% OF THE CLASS
SIMULATOR	STARTUP TRANSIENTS SHUTDOWN ACCIDENTS OPERATION & ABNORMAL RESPONSE EVENTS	320	COMPLETE
BOP LECTURE SERIES	BOP SYSTEMS, RESPONSE SYSTEM OPERATION AND INTERFACES	240	COMPLETE

COLD LICENSE TRAINING (CONT'D)

TITLE	DESCRIPTION	HOURS (APPROX.)	PROJECTED COMPLETION DATE
NSSS LECTURE SERIES	NSSS SYSTEMS, SYSTEM RESPONSE TRANSIENT ANALYSIS	200	COMPLETE
DEH TRAINING	TURBINE CONTROL SYSTEM OPERATION	40	COMPLETE
REACTOR THEORY		120	COMPLETE
TRANSIENT AND ACCIDENT ANALYSES	PLANT AND OPERATING TRANSIENTS	80	NOV. 8 - NOV. 20, 1982 IN PROGRESS
FUEL HANDLING TRAINING	PROCEDURES AND HANDS ON	40	
TECHNICAL SPECIFICATIONS	BASES, LCOs SURVEILLANCE	40	MID JANUARY
COMPACT SIMULATOR	TRANSIENTS & REACTOR THEORY CONCEPTS - PLANT SPECIFIC	-	SEPT. 15 - DEC. 30, 1982
HOT FUNCTIONALS	INTEGRATED PLANT OPERATIONS	200	JAN. 15 - MARCH 1, 1983
SYSTEMS QUALIFICATION CARDS	PROCEDURES, PHYSICAL LOCATIONS, INPLANT WALKTHROUGHS	300-400	IN PROGRESS. TO BE COMPLETED BY HOT FUNCTIONALS

COLD LICENSE TRAINING (CONT'D)

TITLE	DESCRIPTION	HOURS (APPROX.)	PROJECTED COMPLETION DATE
INTENSE REVIEW	FINAL PREPARATION, AUDIT AND REVIEW	200	MARCH 1 - APR. 5, 1983
ORAL AND WRITTEN EXAMS	NRC TYPE TO COVER ALL TRAINING UP TO DATE	-	CONTINUOUS

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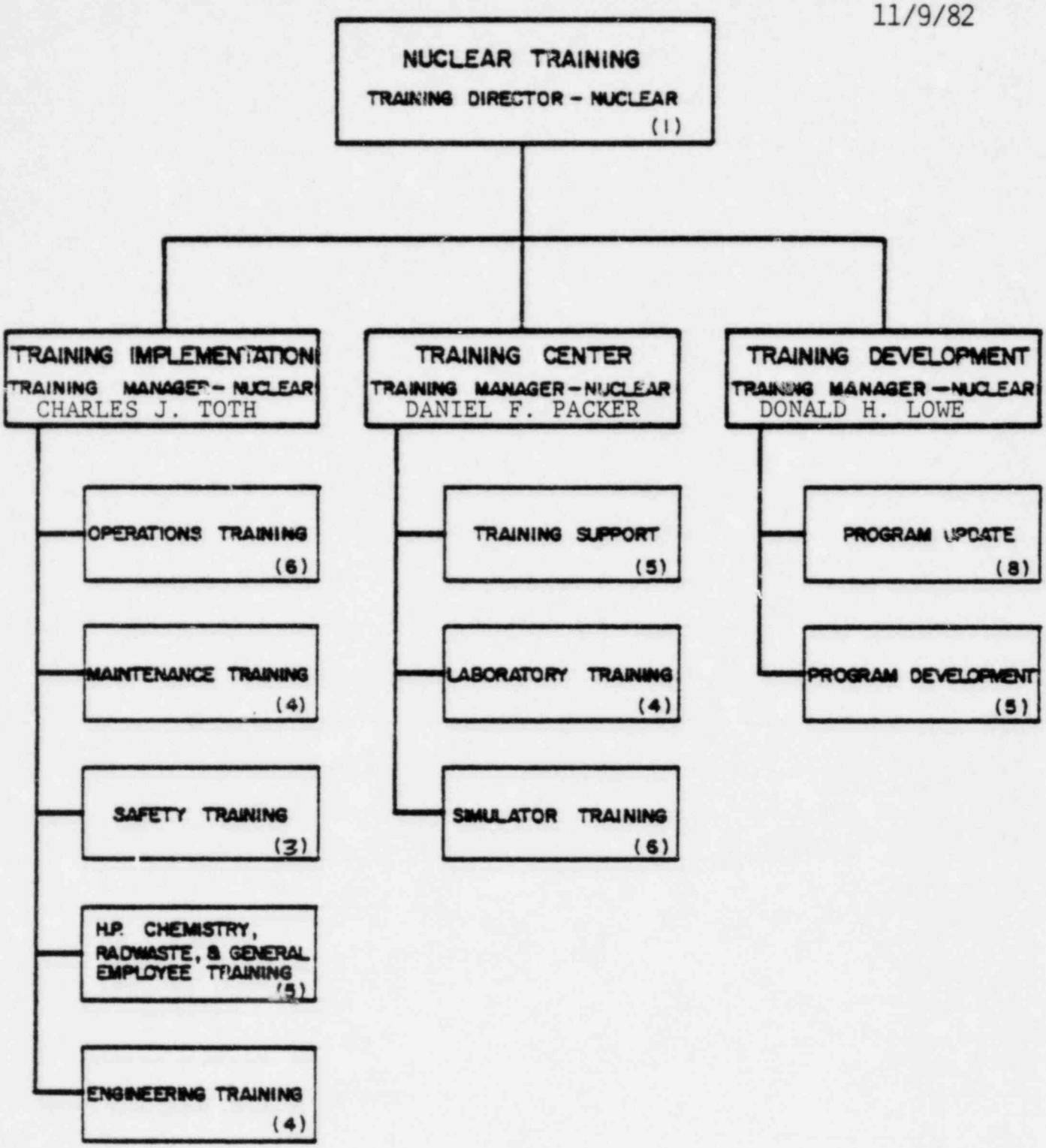
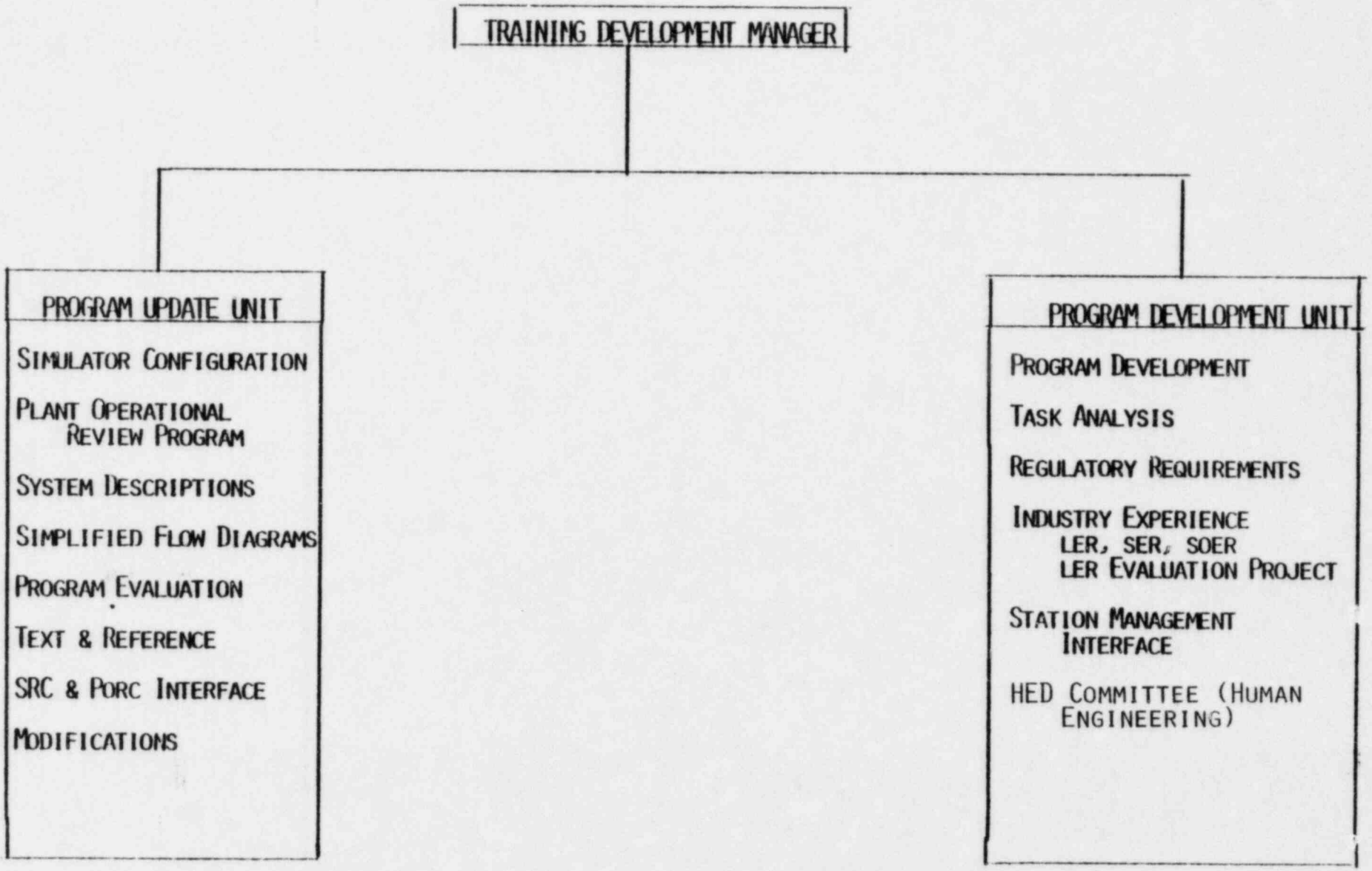
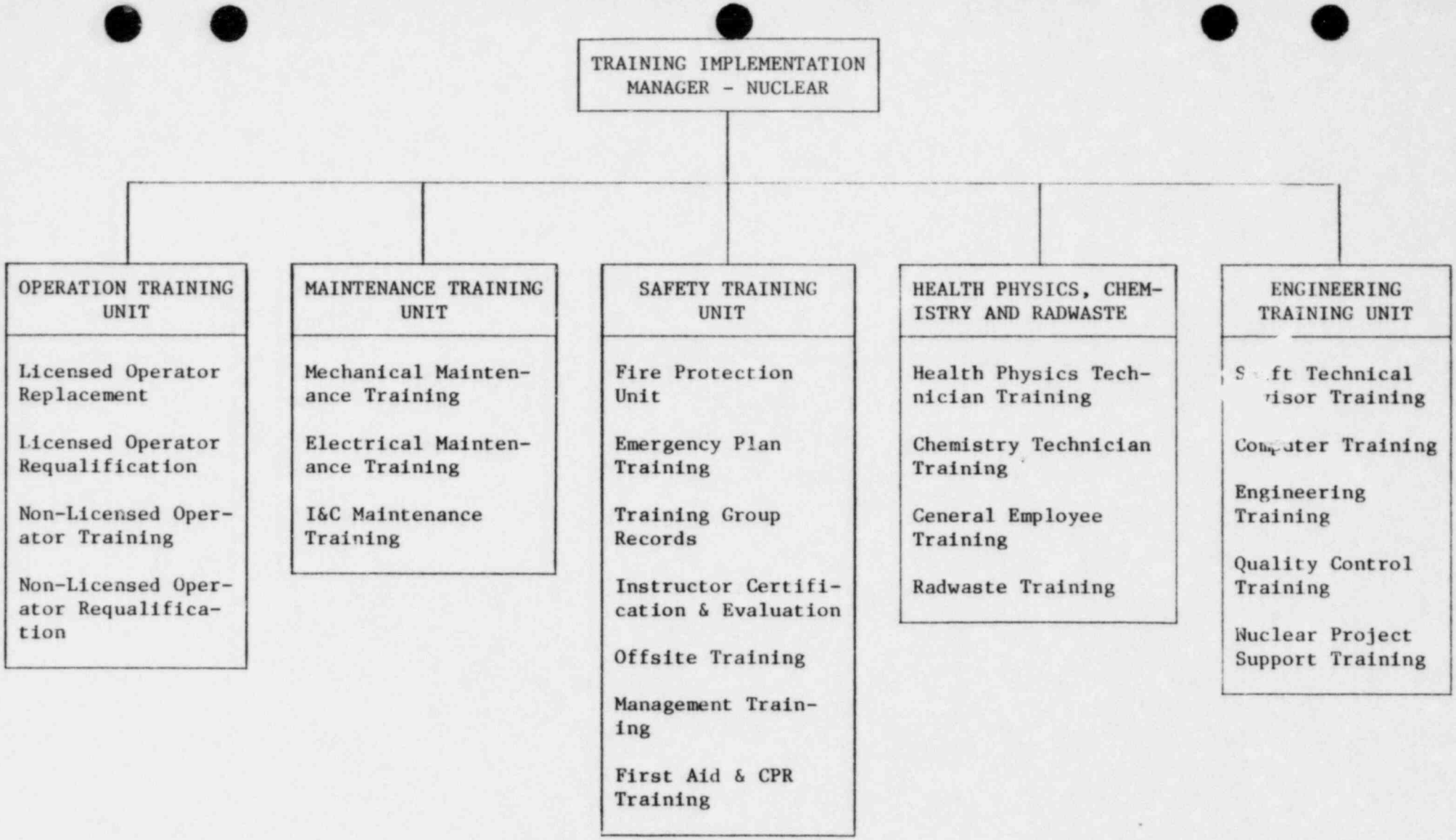
11/9/82



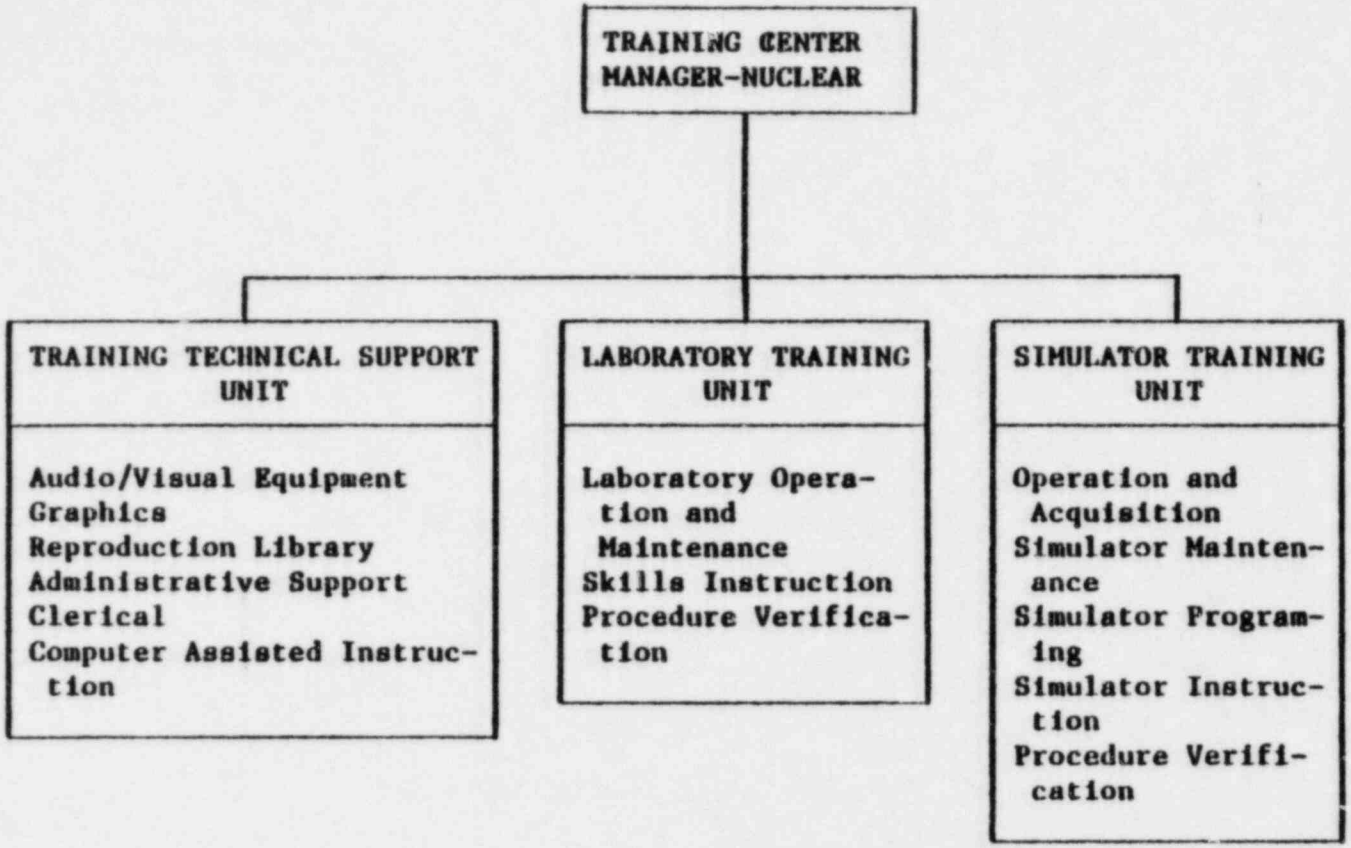
LOUISIANA POWER & LIGHT COMPANY WATERFORD STEAM ELECTRIC STATION	NUCLEAR TRAINING ORGANIZATION	FIGURE 13.1-6



ZAS-ACRS
11/9/82



ZAS-ACRS
11/9/82



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11/9/82

SIMULATOR SCHEDULE

- CONTRACT AWARDED BY END OF YEAR

- SIMULATOR READY FOR TRAINING
  MID 1985

PRELIMINARY LIST OF SIMULATOR MALFUNCTIONS

• PLANT PROTECTION	15
• REACTOR CORE	3
• REACTOR COOLANT SYSTEM	35
• CONTAINMENT ISOLATIONS	5
• SAFETY INJECTION SYSTEMS AND CONTAINMENT SPRAY SYSTEM	26
• DIESEL GENERATORS	12
• EMERGENCY FEEDWATER SYSTEM	12
• COMPONENT COOLING WATER SYSTEM	14
• MAIN STEAM SUPPLY SYSTEMS	12
• MAIN TURBINE	17
• MAIN GENERATOR	15
• MAIN FEEDWATER SYSTEM	32
• CONDENSATE SYSTEM	8
• CONDENSER AND CIRCULATING WATER SYSTEM	10
• ELECTRICAL DISTRIBUTION SYSTEM	18
• CONTROL RODS	19
• CHEMICAL AND VOLUME CONTROL SYSTEM	24
• NUCLEAR INSTRUMENTATION	15
• PLANT COMPUTER SYSTEM AND CONTROL SYSTEMS	17
• ENVIRONMENTAL MONITORING	15
• FIRE PROTECTION	15

- MISCELLANEOUS
  - LOCALIZED INSTRUMENT AIR FAILURE CAUSING ACTUATION OF SEVERAL CONTAINMENT ISOLATION VALVES
  - LOSS OF INSTRUMENT AIR
  - LOSS OF COOLING WATER TO COMPRESSORS
  - BORIC ACID HEAT TRACING FAILURE
  - LOSS OF SPENT FUEL POOL COOLING PUMPS
  - NITROGEN GAS REGULATOR FAILS
  - SERVICE AIR COMPRESSOR(S) TRIP

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11/9/82

AGENDA

- OPERATOR TRAINING PROGRAM
  - DESCRIPTION OF SIMULATOR TRAINING
    - HOW IS THIS TRAINING SUPPLEMENTED BY WATERFORD 3 SPECIFIC FEATURES — C. TOTH
  - HOW ARE INDUSTRY RELATED EVENTS FACTORED INTO THE SIMULATOR TRAINING (CURRENT) — C. TOTH
  - HOW IS SPDS INCORPORATED INTO CURRENT SIMULATOR TRAINING — C. TOTH

SIMULATOR TRAINING

- EIGHT (8) WEEKS FOR PERSONNEL WITHOUT PREVIOUS COMMERCIAL OPERATING EXPERIENCE
- THREE (3) WEEKS MINIMUM FOR PERSONNEL WITH PREVIOUS COMMERCIAL OPERATING EXPERIENCE
- REACTOR STARTUP CERTIFICATION CONDUCTED AT END OF PROGRAM
- WATERFORD 3 PROCEDURES USED TO MAXIMUM EXTENT POSSIBLE

CJT - ACRS
11/9/82

ACCIDENTS AND ABNORMAL OCCURRENCES IN SIMULATOR TRAINING

- MAIN STEAM LINE BREAK
  - INSIDE REACTOR BUILDING
  - OUTSIDE REACTOR BUILDING
- LOSS OF COOLANT ACCIDENTS
  - LARGE BREAK
  - SMALL BREAK (TMI)
- STEAM GENERATOR TUBE LEAKS
- LOSS OF MAIN FEEDWATER
- LOSS OF COMPONENT COOLING TO REACTOR BUILDING
- REACTIVITY ADDITIONS
  - POSITIVE (CONTROL ROD EJECTION, INADVERTENT DILUTION)
  - NEGATIVE (INADVERTENT BORATION, ROD DROPS)
- NATURAL CIRCULATION
- STATION BLACKOUT
- ATWS

CJT - ACRS
11/9/82

WATERFORD 3 SPECIFIC FEATURES IN ADDITION TO SIMULATOR TRAINING

- OPERATING CHARACTERISTIC DIFFERENCES EMPHASIZED DURING REACTOR THEORY COURSE
- PLANT RESPONSE DIFFERENCES EMPHASIZED DURING TRANSIENT AND ACCIDENT ANALYSIS COURSE
- CONTROL ROOM INDICATION AND CONTROL DIFFERENCES IDENTIFIED DURING QUALIFICATION GUIDE COMPLETION AND THREE-PHASE ORAL EXAM PROGRAM
- COMPACT SIMULATOR TRAINING AND PROCEDURE WALKDOWNS ON CONTROL ROOM HALF-SCALE MODEL

THE COMPACT SIMULATOR PERFORMS MALFUNCTIONS/EVOLUTIONS USING PLANT SPECIFIC DATA

- STEAM BREAK ACCIDENT (0-100%)
- LOSS OF FEEDWATER TO STEAM GENERATOR DRYOUT
- STEAM GENERATOR TUBE RUPTURE (VARIABLE)
- NATURAL CIRCULATION COOLDOWN
- LOSS OF COOLANT ACCIDENT (MINOR VIA CVCS)
- LOAD REJECTION
- MAJOR AND MINOR EQUIPMENT MALFUNCTIONS
- NORMAL STARTUPS, SHUTDOWNS AND MANEUVERING
- VARIOUS STAGES OF CORE LIFE

CJT-ACRS

11/9/82

FEEDBACK OF INDUSTRY EXPERIENCE

- OPERATIONAL ASSESSMENT AND INFORMATION DISSEMINATION PROGRAM
  - LER EVALUATIONS
  - SER/SOER EVALUATION
    - RECOMMENDS TRAINING SPECIFICS
- LER EVALUATION PROJECT
  - EVALUATION OF INDUSTRY EXPERIENCE
    - DATA BANK OF LER'S
    - EVALUATION OF W-3 SYSTEMS
    - SUMMARY OF EXPERIENCE
      - PRIORITIZATION OF TRAINING
      - TRAINING EMPHASIS
    - SPECIFIC PACKAGE FOR ENGINEERING, MAINTENANCE AND OPERATORS

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SPDS IN CURRENT SIMULATOR TRAINING

- SPDS AT A CONCEPTUAL STAGE DURING SUMULATOR TRAINING
- SAFETY PARAMETER INSTALLED INSTRUMENTATION EMPHASIZED DURING EMERGENCY PROCEDURE uTILIZATION
- SAME SAFETY PARAMETERS EMPHASIZED DURING COMPACT SIMULATOR TRAINING
- WILL INSTRUCT ALL LICENSED OPERATORS IN ACTUAL SPDS OPERATOR DURING EARLY PART OF REQUALIFICATION CYCLE

GRP-ACRS
11/9/82

AGENDA

- STATUS OF CONTROL ROOM HUMAN FACTORS UPGRADE (SECY 82-111)
  - EMERGENCY OPERATING PROCEDURES- STATUS OF DEVELOPMENT, INCORPORATION WITH TRAINING AND SIMULATOR PROGRAM, PARTICIPATION WITH OWNER'S GROUP, CE INPUT — G.R. PEELER

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EMERGENCY OPERATING PROCEDURES

- EVENT BASED
- EARLY CE INPUT DURING DEVELOPMENT VIA WORKSHOPS
- NRC SELECTED PROCEDURES WALKED THROUGH ON PALO VERDE SIMULATOR AND WATERFORD 3 CONTROL ROOM WITH NRC PROCEDURES AND TEST REVIEW BRANCH
- NRC ACCEPTANCE BASED ON WALKTHROUGHS
  - COMMENTS RECEIVED ARE INCORPORATED IN PROCEDURES
  - PROCEDURES TRANSMITTED TO PROCEDURES AND TEST REVIEW BRANCH FOR FINAL ACCEPTANCE
- CE REVIEW
  - NSSS REVIEW COMPLETED
  - COMPARE WITH ACCIDENT AND TRANSIENT ANALYSIS FOR PROPER TIMING
- HUMAN FACTORS REVIEW (WESTINGHOUSE)
  - FUNCTION AND TASK ANALYSIS
  - WALKTHROUGH ON WATERFORD CONTROL BOARD RESULTS BY JANUARY 16, 1983
- CE OWNERS GROUP PARTICIPATION
  - MEMBER OF OPERATIONS SUBCOMMITTEE
  - DEVELOP GENERIC GUIDELINES (CEN-152)
  - FUNCTION BASED
  - JOINT NRC/OPERATIONS SUBCOMMITTEE IN SEPTEMBER
    - NRC ACCEPTANCE OF CONCEPT LETTER MID NOVEMBER
    - SER ISSUED MID JANUARY, 1983

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AGENDA

- STATUS OF CONTROL ROOM HUMAN FACTORS UPGRADE (SECY 82-111)
  - DETAILED CONTROL ROOM DESIGN REVIEW- RESULTS OF REVIEW, MODIFICATIONS MADE TO ORIGINAL CONTROL ROOM DESIGN — D. LOWE
  - TECHNICAL SUPPORT CENTER AND EMERGENCY OPERATING FACILITY
    - HOW ARE THESE FACILITIES INCLUDED IN PRESENT TRAINING PROGRAM — D. LOWE

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WATERFORD 3 CONTROL ROOM
HUMAN FACTORS UPGRADE

- DECISION TO BUILD AN ADVANCED PLANT MONITORING COMPUTER (1975)
- PLANT OPERATIONS REVIEW PROGRAM (PORP) INITIATED (1975)
- CONTROL ROOM DESIGN REVIEW INITIATED (NOVEMBER 1980)
  - REVIEW / EVALUATION
    - LOUISIANA POWER & LIGHT
    - EBASCO
    - LOCKHEED MISSILE AND SPACE CORPORATION
  - SYSTEM OPERABILITY ASSURANCE PROGRAM (SOAR)
- FORMULATED LP&L APPROACH TO CONTROL ROOM DESIGN REVIEW (DECEMBER 1980)
- HALF-SCALE MOCKUP (LMSC) (LATE 1981)
  - ENHANCEMENT DESIGN STARTED
  - LP&L HED REPORT ISSUED
- HUMAN ENGINEERING DEFICIENCY COMMITTEE FORMED (APR. 1982)
  - ENHANCEMENT DRAWING REVIEWS BEGAN
- HUMAN FACTORS ENGINEERING BRANCH REVIEW
- MAIN CONTROL ROOM ENHANCEMENTS BEGAN (AUGUST 1982)
  - COMPLETION SCHEDULE (DECEMBER 16, 1982)

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CONTROL ROOM DESIGN REVIEW

- NRC WATERFORD 3 CONTROL ROOM AUDIT
  MAY 10-13, 1982

- LP&L RESPONSE TO NRC AUDIT
  - REPORT DELIVERED OCTOBER 22, 1982
  - REPORT REVIEW MEETING NOVEMBER 4, 1982

- AUDIT FINDINGS
  - CONTROLS
    - VISUAL DISPLAYS
    - CONTROL-DISPLAY INTEGRATION
  - ENHANCEMENTS
    - HIERARCHIAL LABELING
    - LOCATION AIDS
  - PANEL LAYOUT AND FUNCTIONAL GROUPING

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CONTROL ROOM DESIGN REVIEW
AUDIT REVIEW MEETING
NOVEMBER 4, 1982

- EACH HED WAS REVIEWED:
  - IMPLEMENTATION SCHEDULE
  - REVISED RESPONSE

- AGREED TO REPORT ON CONTINUING EVALUATIONS:
  - LIGHTING
  - COMMUNICATIONS
  - SCALES AND BANDING
  - EOP VALIDATION
  - COLOR CODING
  - HABITABILITY
  - ENHANCEMENTS OF FIRE PANEL AND REMOTE SHUTDOWN PANEL

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STATUS OF PROGRAM NOVEMBER, 1982

- NRC AUDIT FINDINGS ACTION
  - ACTION COMPLETE 30
  - COMPLETE BY HOT FUNCTIONAL 58
  - COMPLETE BY FUEL LOAD 93
  - CONCURRED NO ACTION 40
  - FIRST REFUELING 4

- MAJOR CATEGORIES OF MODIFICATIONS
  - FUNCTIONAL GROUPING OF INSTRUMENTS
  - ENHANCEMENTS OF CONTROL BOARD
    - STANDARDIZATION OF TERMS AND ABBREVIATIONS
    - COLOR CODING
  - COORDINATION OF VENDOR DISPLAYS

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CONTINUING HUMAN FACTORS PROGRAMS

- ENHANCEMENT MANUAL (DECEMBER, 1982)
  - GLOSSARY OF TERMS AND ABBREVIATIONS
  - COLOR CODE STANDARD
  - MATERIALS AND APPLICATION STANDARD
  - ENHANCEMENT CONTROL PROCEDURE
- CONTROL ROOM HABITABILITY STUDY (DECEMBER 1982)
  - LP&L, CONTRACTOR TEAM EVALUATE:
    - WORK SPACE LIVABILITY
    - STORAGES
    - OPERATORS REFERENCE
- EMERGENCY PROCEDURES VALIDATION (PRELIMINARY NOV. 1982) (FINAL REPORT FEB. 1983)
  - COMBUSTION ENGINEERING
    - PLANT RESPONSE AND TIMING
  - WESTINGHOUSE
    - FUNCTION AND TASK ANALYSIS
    - WALK-THROUGH
- EPRI MAINTAINABILITY STUDY (JANUARY 1984)
- WATERFORD 3 ALARM RESPONSE MANUAL (DECEMBER 1982)
- WATERFORD SIMULATOR AND MOCK-UPS
- PERMANENT HED COMMITTEE (PROCEDURE DECEMBER 1982)

EMERGENCY PLAN TRAINING FOR TSC/EOF

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- GENERAL EMPLOYEE TRAINING - COURSE 1
  - REQUIRED FOR ALL WHO ENTER PROTECTED AREA
  - PRESENTLY 290 OF 330 ESSENTIAL PERSONNEL TRAINED
  - COURSE CONTENT
    - BASIC PURPOSE OF THE EMERGENCY PLAN
    - EMERGENCY CLASSIFICATIONS, FACILITIES, ORGANIZATION, AND RESPONSE ACTIONS

- TECHNICAL SUPPORT CENTER
  - REQUIRED: ESSENTIAL PERSONNEL COURSE
  - PRESENTLY 31 OF 35 TRAINED
  - COURSE CONTENT
    - REVIEW OF EMERGENCY RESPONSE ORGANIZATION
    - TSC LAYOUT, EQUIPMENT, AND ACTIVATION
    - TSC NOTIFICATIONS, COMMUNICATIONS, AND EMERGENCY RECORDS

    RADIOLOGICAL DOSE ASSESSMENT COURSE
    - INSTRUCTIONS FOR STAs
    - 16 TSC STAFF MEMBERS TRAINED

- EMERGENCY OFF-SITE FACILITY
  - REQUIRED: ESSENTIAL PERSONNEL COURSE
  - PRESENTLY 24 OF 25 TRAINED
  - COURSE CONTENT
    - COMMUNICATIONS, LOGS, AND STATUS BOARD UPDATE
    - ACTIVATION AND OPERATION
    - RADIOLOGICAL DOSE ASSESSMENT COURSE
      - INSTRUCTIONS FOR DOSE PROJECTION GROUP ONLY
      - 6 EOF STAFF MEMBERS TRAINED

- DRILLS AND EXERCISES
  - TO DATE, 7 DRILLS TOTALING 1640 HRS. OF LP&L PARTICIPATION

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AGENDA

- STATUS OF CONTROL ROOM HUMAN FACTORS UPGRADE (SECY 82-111)
  - TECHNICAL SUPPORT CENTER AND EMERGENCY OPERATING FACILITY — F.J. DRUMMOND
    - DESCRIPTION AND SCHEDULE FOR COMPLETION — F.J. DRUMMOND
  - SPDS — F.J. DRUMMOND
    - DESCRIPTION AND SCHEDULE FOR COMPLETION — F.J. DRUMMOND
    - HOW ARE PARAMETERS SELECTED — F.J. DRUMMOND

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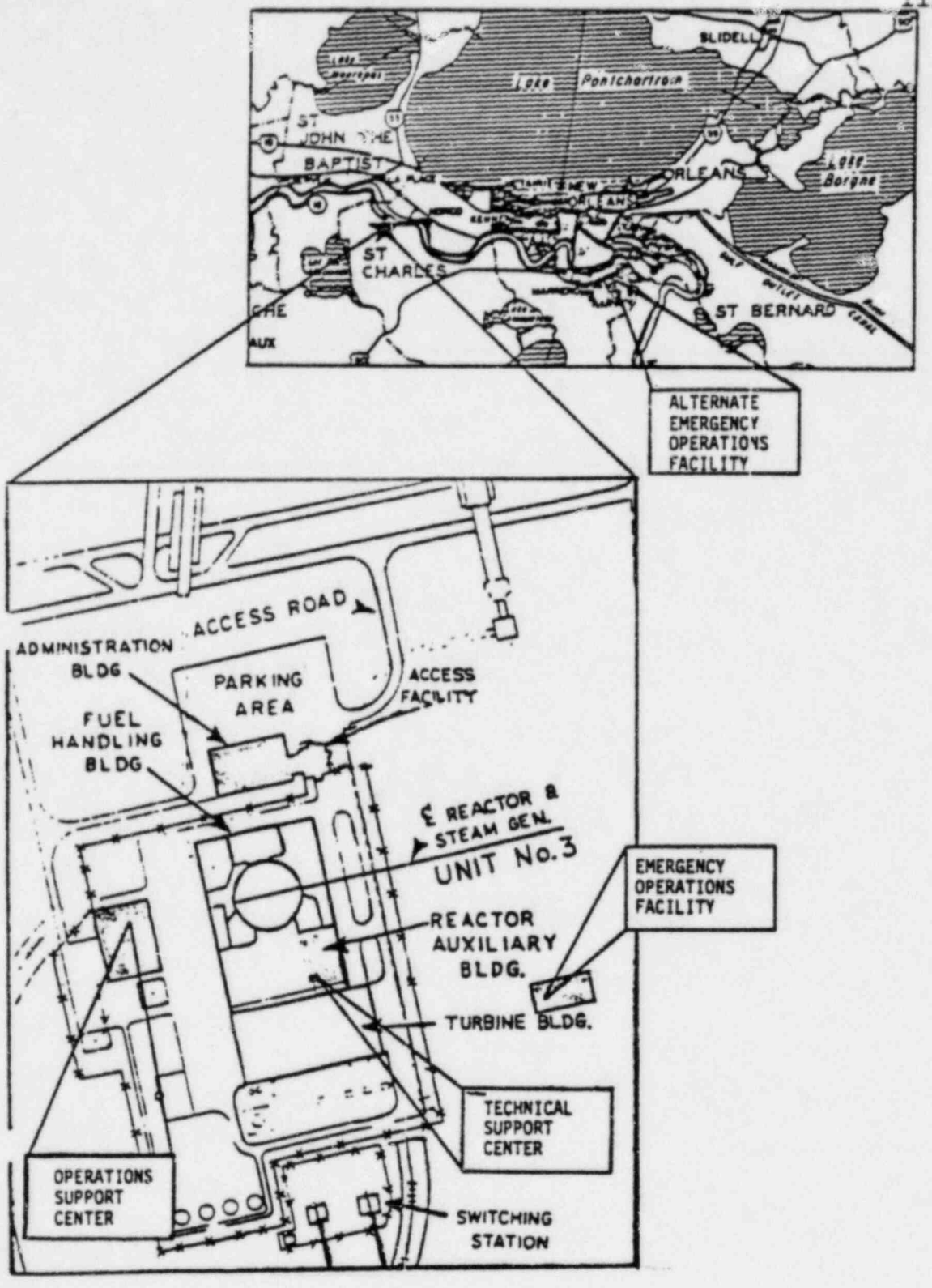

LP&L EMERGENCY RESPONSE
FACILITIES LOCATIONS

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TECHNICAL SUPPORT CENTER

- LOCATED IN CLOSE PROXIMITY TO THE CONTROL ROOM.
- PROVIDES PLANT MANAGEMENT AND TECHNICAL SUPPORT TO THE REACTOR OPERATING PERSONNEL IN THE CONTROL ROOM.
- TECHNICAL DATA DISPLAYS AND PLANT RECORD LOCATED IN THE TSC.
- PRIMARY COMMUNICATIONS CENTER FOR THE PLANT.
- A SENIOR OFFICIAL, DESIGNATED BY LP&L, WILL USE THE RESOURCES OF THE TSC TO ASSIST THE CONTROL ROOM OPERATORS BY HANDLING THE ADMINISTRATIVE ITEMS, TECHNICAL EVALUATIONS AND CONTACT WITH OFF-SITE ACTIVITIES, RELIEVING THE CONTROL ROOM OF THESE FUNCTIONS.

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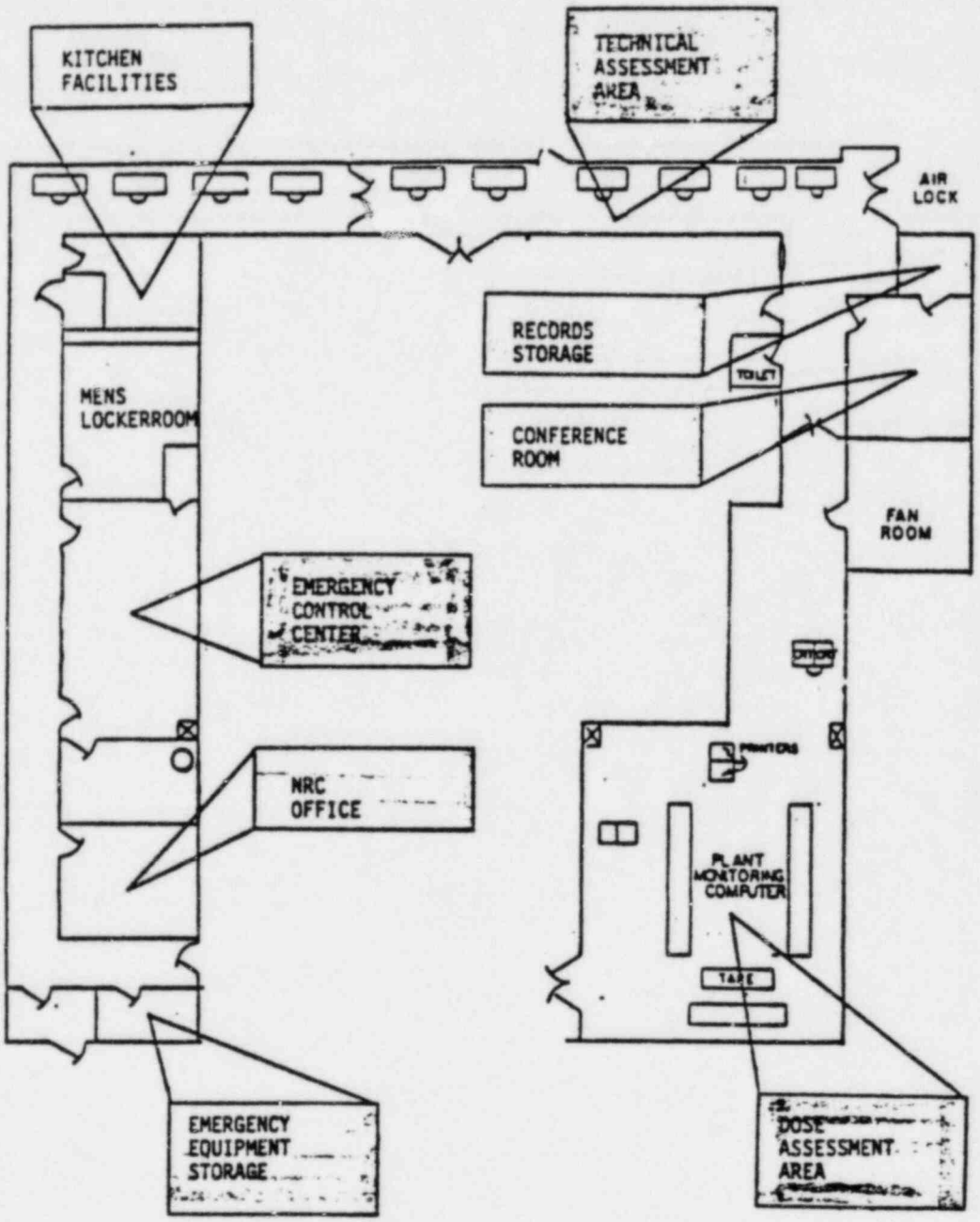
TECHNICAL SUPPORT CENTER LAYOUT



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EMERGENCY OPERATIONS FACILITY

- NEAR SITE SUPPORT FACILITY.
- PROVIDES FOR THE MANAGEMENT OF OVERALL LP&L EMERGENCY RESPONSE (INCLUDING COORDINATION WITH FEDERAL, STATE AND LOCAL ORGANIZATIONS).
- TECHNICAL DATA DISPLAYS AND PLANT RECORDS LOCATED IN THE EOF.
- COORDINATION OF RADIOLOGICAL AND ENVIRONMENTAL ASSESSMENTS, AND DETERMINATION OF RECOMMENDED PUBLIC PROTECTIVE ACTIONS.
- A SENIOR LP&L OFFICIAL IN THE EOF WILL ORGANIZE AND MANAGE LP&L OFFSITE RESOURCES TO SUPPORT THE TSC AND CONTROL ROOM.

BACKUP EMERGENCY OPERATIONS FACILITY

- GRETNA, LOUISIANA
  APPROXIMATELY 18 MILES FROM THE SITE

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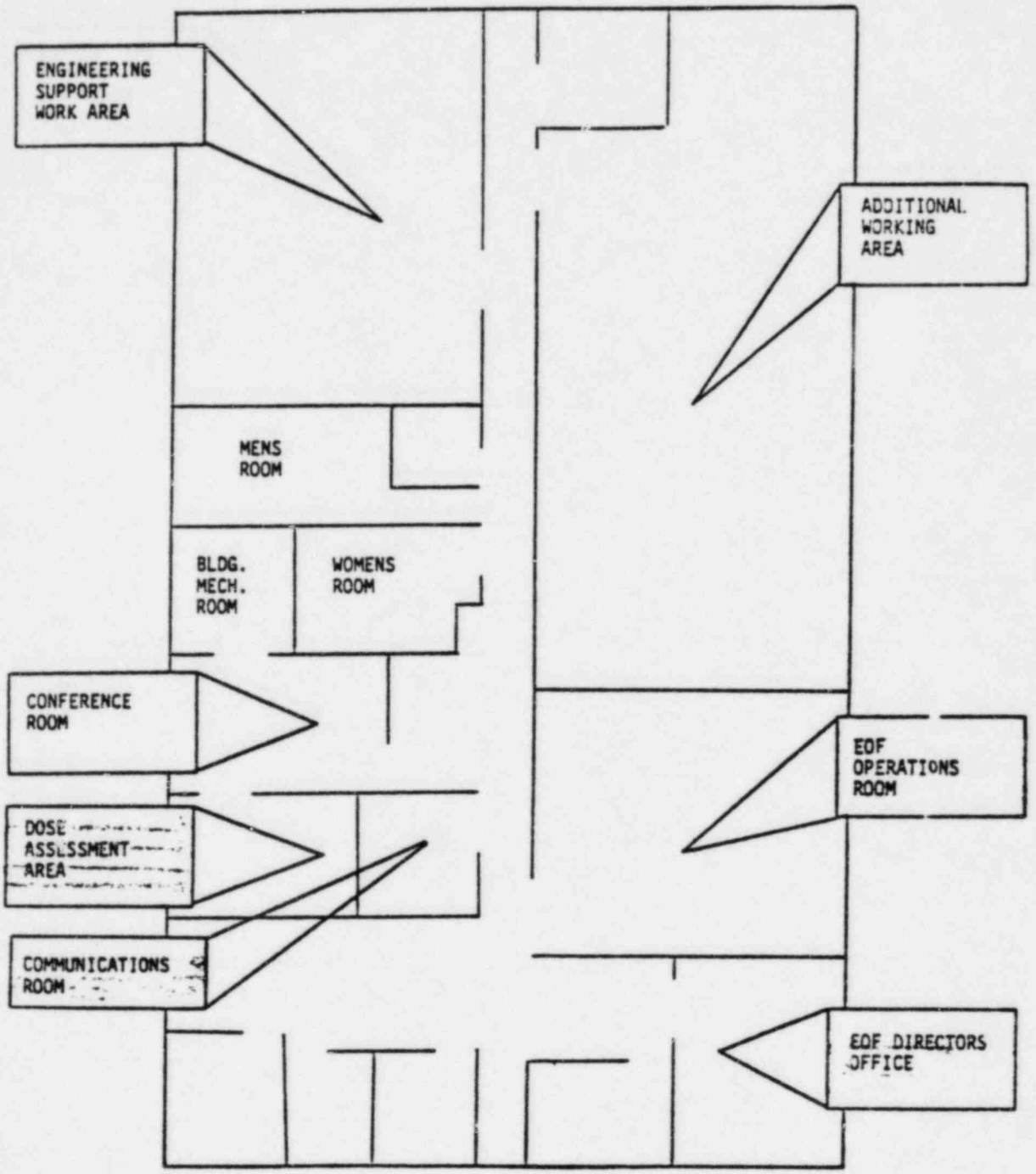
EMERGENCY OPERATIONS FACILITY LAYOUT



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SAFETY PARAMETER DISPLAY SYSTEM

- TWO COMPUTER DRIVEN CRT'S AND OPERATORS CONSOLE
- DRIVEN BY REDUNDANT COMPUTER SYSTEM
- AYDIN COLOR GRAPHIC VIDEO DISPLAYS
- CENTRALLY LOCATED IN CONTROL ROOM
- OPERATOR COMMANDS DESIGNED FOR EASE OF OPERATIONS
- VARIABLE DISPLAY FORMATS (BAR GRAPHS, ONE LINE DIAGRAMS, ETC.)
- DEDICATED STATION IN CONTROL ROOM, TSC, AND EOF
- PROVIDES INFORMATION ON IMPORTANT PLANT FUNCTIONS
    - REACTIVITY CONTROLS
    - REACTOR CORE COOLING AND HEAT REMOVAL
    - REACTOR COOLANT SYSTEM INTEGRITY
    - PRIMARY INVENTORY
    - SECONDARY INVENTORY
    - RADIOACTIVITY CONTROL
    - CONTAINMENT INTEGRITY

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SAFETY PARAMETER DISPLAY SYSTEM

- DOCUMENTS USED TO SELECT PARAMETERS
  - SECY-82-111
  - NUREG-0696
  - NUREG-0814
  - NUREG-0835
  - NUREG/CR-1440
  - REG. GUIDE - 1.97 REV. 2
  - NSAC-8
  - NSAC-10
  - EMERGENCY OPERATING PROCEDURES
  - CONCEPTUAL SPDS REPORT FOR LP&L (DRAPER)
  - PARAMETER LIST FOR QSPDS

- SELECTION PROCESS TO BE COMPLETED AFTER REGIONAL MEETING ON SECY-82-111

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EMERGENCY RESPONSE FACILITIES

- HARDWARE:
  - CONTROL ROOM
    - 1 HERCO CONSOLE
    - 2-13 INCH CRT'S (SPDS)
  - TSC
    - 1 HERCO CONSOLE (SPDS)
    - 2-19 INCH CRT'S (SPDS)
    - 1 LOGGER (SPDS)
    - 1 VIDEO COPIER
  - EOF
    - 1 HERCO CONSOLE (SPDS)
    - 2-19 INCH CRT'S (SPDS)
    - 1 LOGGER (SPDS)

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EMERGENCY RESPONSE FACILITIES

- SOFTWARE:
  - SAFETY PARAMETER DISPLAY SYSTEM
  - COLOR GRAPHICS SYSTEM
  - REPORT GENERATION SYSTEM
  - HISTORICAL DATA COLLECTION AND RETRIEVAL SYSTEM

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QSPDS FEATURES

- THE QSPDS SYSTEM CONTAINS TWO SEPARATE SETS OF HARDWARE AND INPUTS. THE TWO SYSTEMS ARE NOT BACKUPS FOR EACH OTHER.
  - SYSTEM A CONTAINS INPUTS FOR:
    - REACTIVITY
    - PRIMARY SYSTEM INTEGRITY
    - PRIMARY AND SECONDARY FLOW/MASS BALANCES
  - SYSTEM B CONTAINS INPUTS FOR:
    - CONTAINMENT INTEGRITY
    - PLANT RADIATION LEVELS
- BOTH SYSTEMS A AND B CONTAIN INFORMATION REQUIRED FOR INADEQUATE CORE COOLING DETECTION. THIS IS THE ONLY REDUNDANT FEATURE OF THE QSPDS.
- EACH SYSTEM UTILIZES A PLASMA DISPLAY (64 CHARACTERS/LINE - 32 LINES) FOR DISPLAYING PARAMETERS
- EACH SYSTEM ALSO HAS A FIBER OPTIC DATA LINK TO THE PLANT MONITORING COMPUTER (19.2K BAUD TRANSMISSION RATE)

DISPLAY DIRECTORY

CORE 200 | RCS1 300 | RCS2 400

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DISPLAY DIRECTORY

100 DISPLAY DIRECTORY

200 CORE

- 210 SATURATION MARGIN
- 220 REACTOR VESSEL LEVEL
  - 221 HJTC TEMPERATURES
- 230 CORE EXIT THERMOCOUPLES
  - 231 CORE MAP

300 CONTAINMENT

- 310 CONTAINMENT ISOLATION

400 RADIATION EMISSION

500 DIAGNOSTICS

CORE 200 | CNMT 300 | RAD 400

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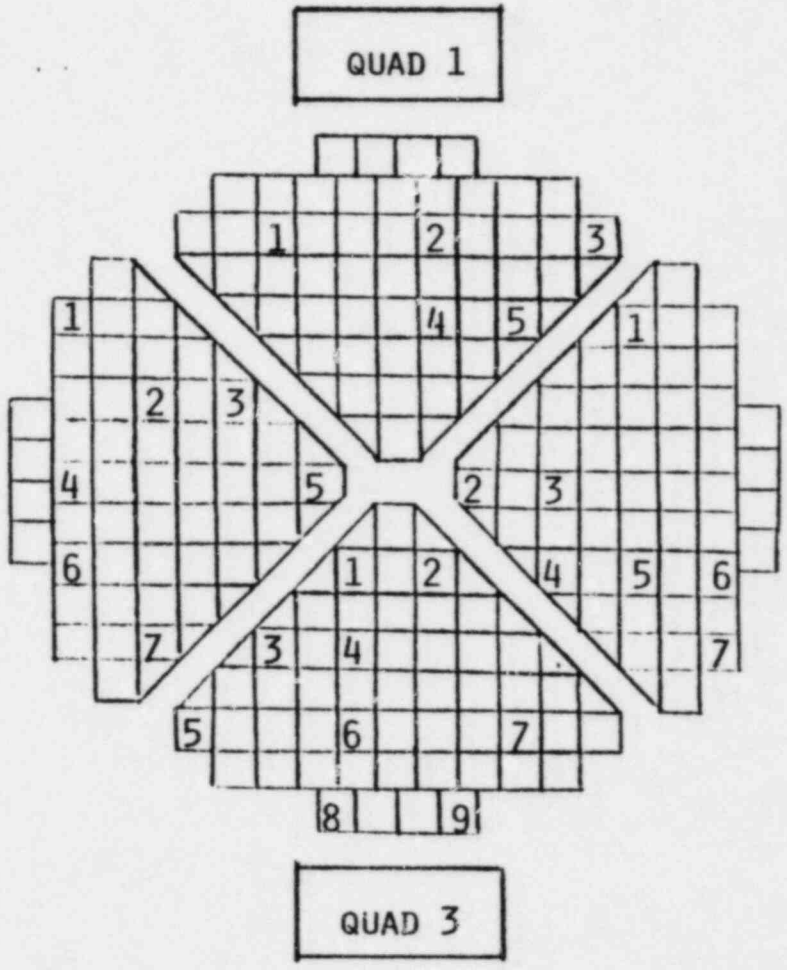
CORE MAP



QUADRANT 1

	CET	TEMP
1	W6	±0000
2	W13	±0000
3	W18	±0000
4	T13	±0000
5	T16	±0000

QUADRANT 2

	CET	TEMP
1	T18	±0000
2	L13	±0000
3	L16	±0000
4	G16	±0000
5	G18	±0000
6	G20	±0000
7	E20	±0000

QUADRANT 4

	CET	TEMP
1	T2	±0000
2	R4	±0000
3	R6	±0000
4	L2	±0000
5	L9	±0000
6	G2	±0000
7	E4	±0000

QUADRANT 3

	CET	TEMP
1	G9	±0000
2	G13	±0000
3	E6	±0000
4	E9	±0000
5	C4	±0000
6	C9	±0000
7	C16	±0000
8	A8	±0000
9	A14	±0000

CORE 200 | RCS1 300 | RCS2 400

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ONSITE SIMULATOR SPDS

- THE SPDS FUNCTIONS WILL BE IMPLEMENTED IN THE WSES-3 SIMULATOR IN THE EXACT CONFIGURATION AS IN THE REAL PLANT.

- THE QUALIFIED SAFETY PARAMETER DISPLAY SYSTEM (QSPDS) WILL BE IMPLEMENTED IN THE SIMULATOR. THE QSPDS FUNCTIONAL PROGRAMS WILL BE MODELED BY THE SIMULATOR VENDOR, WITH THE SAME PLASMA DISPLAYS AND CONTROL CONSOLES PROVIDED FOR THE SIMULATOR AS IN THE ACTUAL PLANT CONTROL ROOM.

- THE EXACT REPLICATION OF THE SPDS PROGRAMS WILL BE ACHIEVED.