UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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MEETING WITH

NRC STAFF AND

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

Nuclear Regulatory Commission
Room P-114
7920 Norfolk Avneue
Bethesda, Maryland

Thursday, April 9, 1987

The meeting convened at 1:10 p.m.

PRESENT:

RICHARD BELANGER
CHARLES VINCENT
WARREN HALL
GEORGE THOMAS
Public Service Company
of New Hampshire

STEVEN LONG
CALVIN MOON
GUS GIESEKOCH
U.S. Nuclear Regulatory
Commission

P R O C E E D I N G S

MR. LONG: I'm Steve Long. I'm a project manager assigned to assist in licensing the Seabrook station. We have a public meeting announced for today to discuss changes to the technical specifications for the station, and for that matter, to discuss any other technical items that may need to be solved before a 5 percent license is issued. Calvin Moon from the facilities operating branch is here. Why don't the others introduce yourselves for the record?

MR. BELANGER: Richard Belanger, New Hampshire Yankee.

MR. VINCENT: Charles Vincent, New Hampshire Yankee.

MR. HALL: Warren Hall, New Hampshire Yankee.

MR. THOMAS: George Thomas, New Hampshire Yankee.

MR. LONG: We distributed some corrected pages from the technical specifications that were issued with the fuel load and precriticality testing license. These are to be discussed today to see if the corrections are proper and to discuss any other items that have come up in the interim.

Warren, I think you are probably the lead on what items are amiss or correct. I would like you to go down item by item as you see fit.

MR. HALL: You want to go through each of these?

MR. LONG: On this as you see fit.

MR. LONG: I'm going to give them to Rich. He has the markups and knows what the grammatical changes that we proposed are. You should have those there, right?

MR. LONG: Yes; I have the marked pages and the corrected pages.

MR. HALL: He was not in the office yesterday and I couldn't find them in his disk, but I knew you had those. If you don't want to go through the table of contents we can skip over that and get right to the meat of it.

MR. BELANGER: The first item is the table 2.2.1, "Change of the allowable value for a steam generator." That is table 2.2.1, page 2-5, "Changing the allowable value for a steam generator water level low load," and that's agreeable. No problem with that one.

MR. HALL: That's changed to 20.6 percent, right?

MR. BELANGER: 20.5 percent.

The next item is on page 3/4 3-11, and it is adding note 7 to item 21, and that was per our meeting of 2/27. That's fine.

The next one is table 3.3-4, page 3/4 3-24, change to item 1D, "allowable value" to 1865. That's fine per our phone conversations.

Page 3/4 3-27, I'm not sure what the original on that was, the change is to item 7C, 21.6 and 20.5, and that's fine.

Page 3/4 3-41, it is a change regarding the triaxial peak accelerographs, similar to what we have requested. I believe that's acceptable; is that correct?

MR. VINCENT: Yes.

MR. HALL: Yes, they wrote it right into the surveillance requirement rather than adding a footnote.

MR. LONG: That's correct. Do you want to postpone the next two pages until Gus gets here?

MR. HALL: That's fine.

MR. BELANGER: Next page is 3/4 3-66, correcting, I believe, a couple of typos and some capitalization. That's fine.

Page 3/4 4-3, again changing to 21.6 percent. That's fine per our letter of March 6, we agreed to that.

Page 3/4 4-5, same change. Fine.

4-6, same change.

Page 3/4 4-21 is adding a note to item F per our meeting. That's fine.

Page 3/4 4-29 is correcting a typographic error. E bar. That's good.

Page 3/4 6-3, corrects a typo. I believe it was an item B inserting the word "test" between "type A" and "fails."

MR. HALL: What page was that?

MR. BELANGER: 3/4 6-3.

This one I'm not sure of, 3/4 6-12. We don't know what this one is.

MR. LONG: We're getting there, I think. It wasn't made in the most recent set of changes either. That page is a mystery for the moment. Keep looking for a change.

MR. BELANGER: We'll just go on and come back to that.

MR. LONG: I would rather not go on for a minute.

MR. BELANGER: It is correcting a typographic error, changing "locked close" to "lock closed."

Page 3/4 6-14 is adding a note specifying the operatability of requirements for mode 4. This was discussed in the 2/27 meeting later on. This is fine.

Page 3/4 6-19, changing the words "equal 850 degrees F" to "equal to 8050 degrees F," correcting a typographic error.

Page 3/4 6-21 is adding the note, a star to 1978 to reference the note at the bottom of the page in item B1.

MR. MOON: The note was already there. The note was not added.

MR. BELANGER: That's correct. The note was already there.

On page 3/4 6-22, item C adds a star to 1978 and repeats the note from the previous page. That's fine.

3/4 7-4 is adding a note to item B2 as discussed in the 2/27 meeting and reflected in our March 6 letter.

MR. LONG: Is the value 500 PSIG correct?

MR. BELANGER: Yes. We originally submitted the 6 and changed it to 5 as a result of discussions in the meeting.

Page 3/4 7-16, deleting the words -- I believe it is deleting the words "at least" from item B. Yes, "flow rate of 1200 CFM plus or minus 10 percent" instead of "at least 1200 CFM plus or minus 10 percent." We agreed to that. That was requested by the resident inspector.

The next page is 3/4 8-3. I'm not sure what this one is offhand.

MR. MOON: It is changing the word "tests" to "testing."

MR. BELANGER: Okay. That's a correction of a typographic error in the note at the bottom of the page. That's acceptable.

On page 3/4 --

MR. HALL: You only changed that in the first line; is that right?

MR. LONG: There were three changes that were like that on three different pages, I believe.

MR. BELANGER: There's a change on the next page.

MR. HALL: This should read "all diesel generators

start for the purpose of generator testing may"; is that correct?

MR. BELANGER: No, it is in the third line. Oh, I see. I understand. It is okay. You are right. That's okay. That's fine.

MR. BELANGER: Okay, on page 8-4 is the same change. It is still acceptable.

On page 3/4 8-5 is correcting the typo, adding a colon at the end of the first line of item E. That's fine there.

MR. LONG: The changes on page 3/4 8-21 are all correcting typographical errors for 1E circuits. There were several places where we had IE circuits and it is not something you specified. We found that.

MR. BELANGER: And that's on page 8-22 also?

MR. LONG: We made the same corrections on 8-22 as well as something I think you had specified.

MR. BELANGER: On 8-23, we finished the title as something that we had originally picked out as a title. The title was incomplete on 8-23 and you made the changes on that.

MR. LONG: Correct. Let's look at 8-22 for a second. Was there any change on there besides the class 1E? I believe not. Yes, we also made another typographical or to hyphenate "non-class" in the title. Very important.

MR. BELANGER: On page 3/4, 11-9, it is correcting a typographic error in the reference, changing it from specification 3.3.10 to 3.3.3.10, and that's fine. We like to see the errors corrected. We know where to go from that one.

The next two pages in the package are the organization charts, and these were discussed at the meeting and provided in the letter.

MR. LONG: You will be providing --

MR. BELANGER: We will provide camera-ready copies of these.

Next is page 6-5. It is correcting a typographic error, the date was specified as 1/97 instead of 1971. That's fine there.

MR. LONG: There's another change on that page under item 6.2.4.

MR. BELANGER: Yes, also changing "shift superintendent" to "control room commander" as specified in the meeting. I guess that was per the changes you had sent to us we had originally sent years ago, sent when we got the specifications -- that change was specified in the letter we sent when we first received the tentative specifications with the license.

On page 6-14 --

MR. LONG: I believe we inserted item F under

6.7.4, and we added a footnote at the bottom of the page that required that to be implemented when you first exceed five percent power.

MR. BELANGER: Is this correct, Warren?

MR. HALL: Yes.

MR. BELANGER: And were there any changes on the next four pages, or is that just pushing the information along through the addition of item F on page 4-14?

MR. LONG: That's an interesting question. I believe it is just pushing along the information, but let me make sure of that.

MR. MOON: Have you proofread it or have you people proofread it?

MR. HALL: We just got them. I was going to say we will sit down and go over them verbally line by line as we usually do. We just got them this afternoon from Steve.

MR. LONG: I just got them from CRESS, and in fact there are several pages in here, probably about 15 pages that have not been proofread by CRESS yet. They are being proofread now by CRESS.

MR. HALL: We will be doing this tonight and probably tomorrow, and if we come up against anything, that we can give you a phone call and let you know.

MR. LONG: I believe all we have here is changes in page numbers on 6-15 up through the end of the section.

MR. BELANGER: We'll have to read this in-detail to verify that that's all that happened, but --

MR. LONG: Because of the added material, we added approximately a third of a page in there. These will be entirely new tech specs with sequential page numbers as opposed to adding a page A like we would do once they are actually issued.

MR. HALL: Give us an opportunity tonight to proofread the back end of the things and the others and we'll let you know tomorrow if there's any problem, okay?

MR. LONG: Certainly.

MR. BELANGER: At first glance everything appears to be in order, but we'll look at it in detail.

MR. LONG: Okay. We deferred two pages on seismic material, hoping to gain one of our staff members. Let's go off the record while I find the staff member.

(Discussion off the record.)

MR. LONG: We have just been joined by Gus Giesekoch. We'll talk about the seismic issues that we deferred earlier.

Gus, you gave me some page changes yesterday, and there was a brief conversation over the telephone where we discussed, or I discussed with the applicant whether or not these page changes fit their understanding of the situation. And I think we have some issues to resolve about the reg

guide that's been followed.

These are the pages you gave me. I provided copies to the company to discuss with you, and I want to come to an agreement as to what we're actually going to put in the specifications. Basically what we have done that I think we have agreed on so far is, for each of the seismic instrumentation devices that are listed on pages 3/4 3-42 and 43, we have listed the building location and the elevation. In addition, we have made a distinction between seismic switches and seismic triggers.

Item 3 on each page was labeled triaxial seismic switches, and we feel there is only one switch, and that was labeled C in that list. We deleted the three other indications of a switch, and we need to add a footnote that describes a triggering mechanism, and that's the topic of discussion, one of the topics of discussion.

Gus, you had proposed some values, I think, quickly on your review, and I think the discussion is really, first of all, what the setpoint should be for the trigger for, I guess it is going to be all three?

MR. GIESEKOCH: Yes, all three, 1A, B and C.

MR. LONG: All three listed under 1. Correct. Who is going to speak for the company about the value that he thinks is appropriate?

MR. HALL: Okay. If you want to make it easier,

can we go to page 43 first and hit that one?

MR. LONG: Sure.

MR. HALL: Based on our conversations, Steve, we looked at this and the information that Gus gave to you, and we have come up with -- we don't have any problems in doing what Gus has proposed on page 4-34. Our only concern on that page, was that we do have two places of indication, and I will let Charlie explain to you the differences between the two, Gus.

MR. GIESEKOCH: Okay.

MR. HALL: Other than that, everything else on the page is fine. We have added the elevations for each one of the mountings in here, and the only thing we would suggest is that the first asterisk be "each accelerograph," et cetera, as you have shown, and that the second asterisk stay as indicated, and that the pound sign next to the "monthly channel check surveillance" remain with its associated note. I will let Charlie explain why.

MR. VINCENT: The double asterisks after "containment foundation seismic switch," that enunciation is a D point from our computer indicating that you exceeded OBE. The triaxial response-spectrum recorders also give you a different D point from the computer, but it also provides you with light indication on what frequency and what axis has exceeded OBE.

So there are different places and locations that we felt we ought to keep them separate to indicate that, and we're not looking at the control panel for seismic monitor, for example, for that enunciation. They are in the seismic monitoring panel. It is broken up into multiple -- the response spectrum recorder has its panel part of it and the seismic switch has its panel, and the accelerographs, accelerometers have their section, okay, and different tag numbers, actual tag numbers in the plant.

We don't refer to that panel as a unit. We refer to that section. So the seismic switch indicates on one panel, on one part of that panel, and the response spectrum recorders indicates on another part of that panel, so it would be wrong to refer to it as a single entity because that's not the way the plan is set up. It is tagged and administratively controlled differently. It is looked at as different items.

MR. GIESEKOCH: I have no problem with it, but I fail to understand, if all you put in there with reactor control room indications, what does it tell you, how does it tell you that there are different units? It doesn't. It enunciates in the control room. That's by requirement. The reg guide tells you that you have to do that, so I have no problem with it, but I fail to see the difference.

MR. VINCENT: There's a "channel check shall

consist of turning the test recess switch to verify that lamps illuminate." We have the D point. We don't have that function on the switch.

MR. GIESEKOCH: Your OBE doesn't have a lamp that turns on?

MR. VINCENT: Yes, it does. It has a D point, but it doesn't have a lamp.

MR. GIESEKOCH: I don't understand this, but that's okay. Whatever you say. I have no problem with it.

MR. VINCENT: We have the enunciation. It is just a different device.

MR. GIESEKOCH: So you want to keep -- why don't you put the pound mark behind the A, then, because to put it behind the M is sort of confusing. Oh, because the channeling check exists -- fine. No problem. Go ahead.

MR. LONG: Let me ask a question on that page. The single asterisk note associated with the surveillance on the number 1 items, the triaxial time history accelerographs indicated that you wouldn't be doing a monthly check on the seismic triggers, and because those are located in different locations, I understand --

MR. GIESEKOCH: You can't do it. There's no way that you can check.

MR. LONG: I understand the company's statement was that the asterisk says you will not be checking seismic

triggers.

MR. HALL: That was for the three up at the top, and it would have been because we were saying, correct me if I'm wrong, it was being covered down here. It doesn't matter. It goes away.

MR. LONG: Gus proposed a note that says each accelerograph has a triaxial trigger to activate the recorder. I don't understand what an asterisk on a channel check that has that note really does for us.

MR. VINCENT: Because we're taking out the triggers. The number 3, the triaxial seismic switches, the reg guide calls a switch different than a trigger, but in reality the hardware is identical, just at different setpoints. When we take them out of number 3 and combine them with number 1 we have to cover those surveillances. Up here we said except the triggers, because we covered them under 3. Now that we canceled them out of 3 we cover them under number 1.

MR. LONG: Okay.

MR. HALL: He is just deleting it off each monthly and putting it beside this.

MR. VINCENT: Which is perfectly okay. No problem with that at all.

MR. HALL: As I understand it, on page 3/4 3-43, under the table 4.3-4, the first one, item 1, triaxial time

history accelerographs, will have an asterisk by it, and item A will read "1-SM-XT-6700, free field control room east air intake" and parenthesis, "(11 feet 6 inches)."

Well, we'll provide all of the locations for each one of these, and the asterisk will have a single one at the bottom of the page reading "each accelerograph has a triaxial trigger to activate recorders," a double asterisk reading "with reactor control room indications," then the pound sign, which will remain as it is, "channel check to consist of turning the test reset switch and verify all lamps illuminated on 1-SM-XT-6700," and the locations and elevations will be as I gave you over the phone?

MR. LONG: It would be helpful if someone made sure that I have made no transcription errors here.

MR. HALL: We have written this up and I will give you a copy if you would like.

Back to page 3-42, on that we have taken all the same changes that were on the first page and done those with regards to adding the elevations and the buildings that they are located in, et cetera, and just the way that we discussed, Steve, and the only problems that we had were with the two notes that Gus had proposed at the bottom of the page, and I will yield to Charlie and let him discuss why we had a problem with those.

MR. VINCENT: The first was the seismic triggers.

The number that we saw looked like .02 G.

MR. GIESEKOCH: Right.

MR. VINCENT: We would prefer to stay at .01 G because that's what's required in the surveillance requirement, and also the ANSI standard 18.5 gives us .005 to .02.

MR. GIESEKOCH: That's fine. Why I took this one was in the FSAR you set between .005 to.02. You want to change it to .01G period?

MR. VINCENT: Yes.

MR. GIESEKOCH: That's fine.

MR. VINCENT: That will agree with the first page of the seismic section, says you go out and change plates and do those, restore operability.

MR. GIESEKOCH: Where did you read that?

MR. VINCENT: In the very first page.

MR. BELANGER: 3/4 3-41.

MR. VINCENT: That's how we know to do it. We get the alarm and we know to do that.

MR. GIESEKOCH: Fine.

MR. VINCENT: Okay, we had a seismic switch setpoint that we had -- the FSAR calls it out at .13 G, half of SSE is .125. We'll go with .125, but we didn't think .005 of a G was material.

MR. GIESEKOCH. We wanted to be consistent with

our SER. It discusses the OBE at .125 G.

MR. VINCENT: I think someone rounded it off one time when they wrote it down.

MR. GIESEKOCH: I just wanted to be consistent.

MR. VINCENT: That's where we're coming from.

MR. HALL: Would you have a problem if we left it at .13 because we already have our setpoints there?

MR. GIESEKOCH: There's no difference.

MR. VINCENT: Then the last point was the difference between vertical and horizontal OBE. We are a 10 CFR 400 plant for our spectrum, and under the guidelines vertical and horizontal OBE are the same above 3.5 hertz. .13 or .125 is synonymous to 33 hertz from reg guide 160. At 33 hertz they are the same. Until we get down to 3.5 hertz, you don't get separation, and when you go and you don't get your full 2/3 until you get to 2.5 hertz, and it is a ratio between 3.5 to .25. It is not a full 2/3. Our instrumentation, the seismic switch is from one to 30 hertz, okay? A broad spectrum, and it has a resident frequency of 4 hertz. A natural frequency of 4 hertz.

MR. GIESEKOCH: Ratio? Because I particularly talked to Kinemetrics and asked him, and he said the flat response is only between 1 and 10 hertz.

MR. VINCENT: That's true. That's true. But --

MR. GIESEKOCH: So the flat response is only in

that part of the spectrum.

MR. VINCENT: You don't get the 2/3 until you get to the 3.5 hertz.

MR. GIESEKOCH: So still in the one-to-one ratio?

MR. VINCENT: Yes. It is highlighted right here. Down to 3.5 hertz. The majority of the frequencies in the 1 to 10 hertz is still one-to-one. Number 7 is 4 hertz. You are in here most of that switch. It is not -- this is just a reg guide 16 curve, the spectrum taken in relationship to our response spectrum. The easiest since that was what was germane to our instruments. It shows you the general shape. I'm saying number 7 sensor is 4 hertz. It would give you a point. It is 3.5 where it breaks off, but you can see horizontal and vertical are the same for the majority of the frequency range that we're talking about.

MR. GIESEKOCH: This acceleration here --

MR. VINCENT: That's a G. This curve here, with the plus signs, is the vertical, and here's the horizontal, but this is from 4 hertz down to 1 hertz. The high frequency is here. It is just the opposite of your tripartite paper where it has the opposite shape, but it shows that you don't get that until you get to our lower frequency and OBE .13 isn't until you get to 33 hertz.

MR. GIESEKOCH: You are at least above 1 hertz here?

MR. VINCENT: Our instruments never go below 1 hertz. None of them do.

MR. GIESEKOCH: Okay, so you are saying that even though you are in the change of the 3.5, you just take the one-to-one ratio?

MR. VINCENT: Yes, because the OBE value we're sending is on the high end. If we were to take low end we would pick a much higher OBE, .55. That wouldn't be conservative.

MR. GIESEKOCH: So you would just leave it at .13 then for horizontal and vertical?

MR. VINCENT: Yes.

MR. GIESEKOCH: All right.

MR. VINCENT: That was our only question, right?

MR. GIESEKOCH: Where is the one asterisk?

MR. HALL: That's what I'm trying to figure out.

MR. GIESEKOCH: Shouldn't we cross that out?

MR. HALL: I'm trying to figure it out. We had the one asterisk --

MR. LONG: They are over under the one in the interim instruments operable.

MR. HALL: It should still be there with that. That's what I was trying to figure out. Then we put -- the double asterisk would go right there; correct?

MR. GIESEKOCH: Yes. I see.

MR. HALL: Trigger mechanism. And then the triple asterisk goes at item 3. Right.

MR. GIESEKOCH: All right.

(Discussion off the record.)

MR. LONG: Back on the record.

You have had a chance to talk it over among yourselves and you have some changes to propose here?

MR. HALL: Yes. Gus, why don't you look at this and make sure that's as we just agreed. I think that covers all the bases of each of the items we discussed on both table 4.3-4 and 3.3-7. I believe that covers it.

MR. GIESEKOCH: On item 1C I had written out "in full containment operating floor."

MR. HALL: That's purely up to you. If you want to spell it out that's fine.

MR. GIESEKOCH: You have to, because control room and containment are too close to abbreviate them, so I would like you to spell that out.

MR. HALL: That's fine with us. We'll spell it out.

MR. GIESEKOCH: To be consistent, 4C, primary auxiliary building. How about spelling that out?

MR. LONG: I think I will use what he gave me to make sure we have the proper elevations listed in terms of feet and inches. Is there any other change in that?

MR. HALL: No. You can spell them out if you want to. That's fine with us.

MR. GIESEKOCH: Okay, with the three asterisks, the footnote with the three asterisks, last word should be a-x-e-s instead of a-x-i-s.

MR. LONG: That's what I have.

MR. HALL: I spelled it -i-s. That was over the phone.

MR. GIESEKOCH: The same would go for page 43, and I don't see any problems there.

MR. HALL: Okay.

MR. GIESEKOCH: Very good.

MR. LONG: Do we have any other issues to cover besides the tech specs?

MR. THOMAS: Just a question associated with the tech specs. On the meeting of February 27 we had proposed a minor change to allow the plant to stay in mode 3 if they had more than one MSIV closed, and I understand there was some technical discussion with regard to that and wondered where the status of it was at this point in time.

MR. MOON: I have been trying to find the basis for the original tech spec and have been unable to do so. I guess I don't understand all of the ramifications here sufficiently to recommend that the staff accept your proposal. I assume in 2 and 3 you need the valves operable

for removal of TK heat.

MR. THOMAS: You are still looking into 2?

MR. MOON: Yes. I guess somewhere along the line we may need a writeup on this. Is it described in the FSAR at this time?

MR. THOMAS: The main steam isolation valves are of course described in the FSAR, and we can provide you further information with regard to this if necessary.

MR. MOON: What we need, I think, is a demonstration that there's no need in any accident analysis or shutdown that you do not need one of these valves to be operable.

MR. THOMAS: That seems reasonable.

MR. MOON: I just was not able to put the three together.

MR. THOMAS: No problem. We can provide that.

MR. LONG: It may be you need a minimum number to be operable, but it is not three.

MR. THOMAS: That may be true. Let us give you more detail. I think in the first meeting we brought it up as something we would like to do, provided some additional information, and now we can go into providing the detailed justification.

MR. LONG: Fine. I understand you will come back to us with some other requested changes, sooner or later.

MR. HALL: On this thing we had a phone call, I believe, and it was our understanding after the phone call that the staff was happy, and that they didn't have any problem with what we were proposing, and Cal, I guess, is saying you are still trying to look for the bases of the tech spec. If you have some specifics, can you and I get together on the phone and give me some specifics about what you want?

MR. MOON: Sure.

MR. HALL: Is that all right, Steve?

MR. LONG: Sure. Try to tie me into it when you do that.

MR. HALL: Sure, and you can tell me what you need, or if the staff has something or you can't find something, you want us to fill in a blank, let us know and we'll try to fill it.

MR. LONG: Anything else?

MR. THOMAS: I don't think we have anything.

MR. HALL: Not unless you guys have something.

MR. LONG: Let's conclude the meeting at this point.

(Whereupon, at 2:30 p.m., the meeting was concluded.)

CERTIFICATE OF OFFICIAL REPORTER

This is to certify that the attached proceedings before the UNITED STATES NUCLEAR REGULATORY COMMISSION in the matter of:

NAME OF PROCEEDING: MEETING WITH NRC STAFF AND PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

DOCKET NO.: 50-443

PLACE: BETHESDA, MARYLAND

DATE: THURSDAY, APRIL 9, 1987

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission.

(sigt) Kathie S. Weller

(TYPED)
KATHIE S. WELLER
Official Reporter
ACE-FEDERAL REPORTERS, INC.
Reporter's Affiliation

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TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)	TRIP SETPOINT	ALLOWABLE VALUE
11. Pressurizer Water Level - High	8.0	2.18	1.82	≤92% of instrument span	≤93.8% of instrument span
12. Reactor Coolant Flow - Low	2.5	1.87	0.6	>90% of loop design flow*	>89.4% of loop design flow*
13. Steam Generator Water Level Low - Low	17.0	15.28	1.76	≥21.6% of narrow range instrument span	≥20.5% of narrow range instrument span
14. Undervoltage - Reactor Coolant Pumps	15.0	1.39	0	≥10,200 volts	≥9,822 volts
15. Underfrequency - Reactor Coolant Pumps	2.9	0	0	≥55.5 Hz	≥55.3 Hz
16. Turbine Trip					
a. Low Fluid Oil Pressure	N.A.	N.A.	N.A.	≥500 psig	≥450 psig
b. Turbine Stop Valve Closure	N.A.	N.A.	N.A.	≥1% open	≥1% open
17. Safety Injection Input from ESF	N.A.	N.A.	N.A.	N.A.	N.A.

*Loop design flow = 95,700 gpm

TABLE 4.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	ACTUATION LOGIC TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
Reactor Trip System Interlocks (Continued)						
e. Power Range Neutron Flux, P-10	N.A.	R(4)	R	N.A.	N.A.	1, 2
f. Turbine Impulse Chamber Pressure, P-13	N.A.	R	R	N.A.	N.A.	1
19. Reactor Trip Breaker	N.A.	N.A.	N.A.	M(7, 11)	N.A.	1, 2, 3*, 4*, 5*
20. Automatic Trip and Interlock Logic	N.A.	N.A.	N.A.	N.A.	M(7)	1, 2, 3*, 4*, 5*
21. Reactor Trip Bypass Breaker	N.A.	N.A.	N.A.	M(7, 14),R(15)	N.A.	1, 2, 3*, 4*, 5*

TABLE 3.3-4

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)	TRIP SETPOINT	ALLOWABLE VALUE
1. Safety Injection (Reactor Trip, Feedwater Isolation, Start Diesel Generators, Phase "A" Isolation, Containment Ventilation Isolation, and Emergency Feedwater, Service Water to Secondary Component Cooling Water Isolation, CBA Emergency Fan/Filter Actuation, and Latching Relay).					
a. Manual Initiation	N.A.	N.A.	N.A.	N.A.	N.A.
b. Automatic Actuation Logic	N.A.	N.A.	N.A.	N.A.	N.A.
c. Containment Pressure--Hi-1	4.2	0.71	1.67	$\leq$ 4.3 psig	$\leq$ 5.3 psig
d. Pressurizer Pressure--Low	13.1	10.71	1.69	$\geq$ 1875 psig	$\geq$ 1865 psig
e. Steam Line Pressure--Low	13.1	10.71	1.63	$\geq$ 585 psig	$\geq$ 568 psig*
2. Containment Spray					
a. Manual Initiation	N.A.	N.A.	N.A.	N.A.	N.A.
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	N.A.
c. Containment Pressure--Hi-3	3.0	0.71	1.67	$\leq$ 18.0 psig	$\leq$ 18.7 psig

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)	TRIP SETPOINT	ALLOWABLE VALUE
7. Emergency Feedwater					
a. Manual Initiation					
(1) Motor driven pump	N.A.	N.A.	N.A.	N.A.	N.A.
(2) Turbine driven pump	N.A.	N.A.	N.A.	N.A.	N.A.
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	N.A.
c. Steam Generator Water Level--Low-Low Start Motor-Driven Pump and Start Turbine-Driven Pump	17.0	15.28	1.76	$\geq$ 21.6% of narrow range instrument span.	$\geq$ 20.5% of narrow range instrument span.
d. Safety Injection Start Motor-Driven Pump and Turbine-Driven Pump	See Item 1. above for all Safety Injection Trip Setpoints and Allowable Values.				
e. Loss-of-Offsite Power Start Motor-Driven Pump and Turbine-Driven Pump	See Item 9. for Loss-of-Offsite Power Setpoints and Allowable Values.				
8. Automatic Switchover to Containment Sump					
a. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	N.A.
b. RWST Level--Low-Low Coincident With Safety Injection	2.75	1.0	1.8	$\geq$122,525 gals.	$\geq$121,609 gals.
	See Item 1. above for all Safety Injection Trip Setpoints and Allowable Values.				

INSTRUMENTATION

MONITORING INSTRUMENTATION

SEISMIC INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.3 The seismic monitoring instrumentation shown in Table 3.3-7 shall be OPERABLE.

APPLICABILITY: At all times.

ACTION:

a. With one or more of the above required seismic monitoring instruments inoperable for more than 30 days, prepare and submit a Special Report to the Commission pursuant to Specification 6.8.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the instrument(s) to OPERABLE status.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.3.1 Each of the above required seismic monitoring instruments shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION, and ANALOG CHANNEL OPERATIONAL TEST at the frequencies shown in Table 4.3-4.

4.3.3.3.2 Each of the above required seismic monitoring instruments actuated during a seismic event greater than or equal to 0.01 g shall be restored to OPERABLE status within 24 hours except that Triaxial Peak Accelerographs 1-SM-XR-6702 and 1-SM-XR-6703 shall be restored within 7 days and a CHANNEL CALIBRATION performed within 30 days following the seismic event. Data shall be retrieved from actuated instruments and analyzed to determine the magnitude of the vibratory ground motion. A Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.8.2 within 14 days describing the magnitude, frequency spectrum, and resultant effect upon facility features important to safety.

TABLE 4.3-4

SEISMIC MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENTS AND SENSOR LOCATIONS	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST
1. Triaxial Time-History Accelerographs *			
a. 1-SM-XT-6700 Free Field ~~East~~ Control Room, East Air Intake, elevation 11' 6"	M*	R	SA
b. 1-SM-XT-6701 Containment Foundation, elevation -26' 0"	M*	R	N.A.
c. 1-SM-XT-6710 Cont. Operating Floor, elevation 25' 0"	M*	R	N.A.
2. Triaxial Peak Accelerographs			
a. 1-SM-XR-6702 Reactor Vessel Support, Containment Building, elevation -13' 4"	N.A.	R	N.A.
b. 1-SM-XR-6703 Reactor Coolant System Piping, Containment Building elevation -7'9"	N.A.	R	N.A.
c. 1-SM-XR-6704 PCCW Piping Primary Auxiliary Building, elevation 47' 0"	N.A.	R	N.A.
3. Triaxial Seismic Switches			
~~a. 1-SM-XS-6700 Free Field **~~	~~M~~	~~R~~	~~SA~~
~~b. 1-SM-XS-6701 Containment Foundation**~~	~~M~~	~~R~~	~~N.A.~~
~~c~~ 1-SM-XS-6709 Containment Foundation,** elevation -26' 0"	M	R	N.A.
~~d. 1-SM-XS-6710 Cont. Opr. Floor **~~	~~M~~	~~R~~	~~N.A.~~
4. Triaxial Response-Spectrum Recorders			
a. 1-SM-XR-6705 Containment Foundation,** elevation -26' 0"	M#	R	N.A.
b. 1-SM-XR-6706 SG 11B Support, Containment Building, elevation -20' 0"	N.A.	R	N.A.
c. 1-SM-XR-6707 Primary Aux. ~~Bldg.~~ Building, elevation 25' 0"	N.A.	R	N.A.
d. 1-SM-XR-6708 Service Water Pump House, elevation 4' 0"	N.A.	R	N.A.

*~~Except seismic trigger~~ Each accelerograph has a triaxial trigger to activate the recorder.

**With reactor control room indications.

#CHANNEL CHECK to consist of turning the test/reset switch and verify all lamps illuminate on 1-SM-XR-6705.

TABLE 3.3-7

SEISMIC MONITORING INSTRUMENTATION

INSTRUMENTS AND SENSOR LOCATIONS	MEASUREMENT RANGE	MINIMUM INSTRUMENTS OPERABLE
1. Triaxial Time-History Accelerographs**		
a. 1-SM-XT-6700 Free Field East Control Room Air Intake elevation 11' 6"	± 1g	1*
b. 1-SM-XT-6701 Containment Foundation elevation -26' 0"	± 1g	1*
c. 1-SM-XT-6710 Containment Operating Floor elevation 25' 0"	± 1g	1*
2. Triaxial Peak Accelerographs		
a. 1-SM-XR-6702 Reactor Vessel Support Containment Building elevation -13' 4"	0-20 Hz.	1
b. 1-SM-XR-6703 Reactor Coolant Piping Containment Building elevation -7' 8"	0-20 Hz.	1
c. 1-SM-XR-6704 PCCW Piping System Primary Auxiliary Building elevation 47' 0"	0-20 Hz.	1
3. Triaxial Seismic Switches		
~~a. 1-SM-XS-6700 Free Field~~	~~N.A.~~	~~1*~~
~~b. 1-SM-XS-6701 Containment Foundation~~	~~N.A.~~	~~1*~~
c. 1-SM-XS-6709 Containment Foundation elevation -26' 0"***	0.025g to 0.25g	1*
~~d. 1-SM-XS-6710 Cont. Opr. Floor~~	~~N.A.~~	~~1*~~
4. Triaxial Response-Spectrum Recorders		
a. 1-SM-XR-6705 Containment Foundation elevation -26' 0"	1-30 Hz.	1*
b. 1-SM-XR-6706 SG 11B Support Containment Building elevation -20' 0"	1-30 Hz.	1
c. 1-SM-XR-6707 Primary Auxiliary Building elevation 25' 0"	1-30 Hz.	1
d. 1-SM-XR-6708 Service Water Pump House elevation 4' 0"	1-30 Hz.	1

** Trigger mechanism in accelerograph unit activates recorders in control room when it senses a ground motion of 0.01g.

*** Switch setpoint is 0.13g for horizontal and vertical axes.

*With reactor control room indication

TABLE 4.3-6 (Continued)

TABLE NOTATIONS

* At all times.

** During RADIOACTIVE WASTE GAS SYSTEM operation.

*** When the gland seal exhauster is in operation.

**** The CHANNEL OPERATIONAL TEST for the flow rate monitor shall consist of a verification that the Radiation Data Management System (RDMS) indicated flow is consistent with the operational status of the plant.

\# Noble Gas Monitor for this release point is based on the main condenser air evacuation monitor.

(1) The DIGITAL CHANNEL OPERATIONAL TEST shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occurs if the instrument indicates measured levels above the Alarm/Trip Setpoint.

(2) The DIGITAL CHANNEL OPERATIONAL TEST shall also demonstrate that control room alarm annunciation occurs if the instrument indicates measured levels above the Alarm Setpoint.

(3) The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards (NBS) or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used.

(4) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:

a. One volume percent oxygen, balance nitrogen, and

b. Four volume percent oxygen, balance nitrogen.

(5) The CHANNEL CALIBRATION shall be performed using sources of various activities covering the measurement range of the monitor to verify that the response is linear. Sources shall be used to verify the monitor response only for the intended energy range.

SURVEILLANCE REQUIREMENTS

4.4.1.2.1 At least the above required reactor coolant pumps, if not in operation, shall be determined OPERABLE once per 7 days by verifying correct breaker alignments and indicated power availability.

4.4.1.2.2 The required steam generators shall be determined OPERABLE by verifying secondary side water level to be greater than or equal to 21.6% at least once per 12 hours.

4.4.1.2.3 The required reactor coolant loops shall be verified in operation and circulating reactor coolant at least once per 12 hours.

SURVEILLANCE REQUIREMENTS

4.4.1.3.1 The required reactor coolant pump(s), if not in operation, shall be determined OPERABLE once per 7 days by verifying correct breaker alignments and indicated power availability.

4.4.1.3.2 The required steam generator(s) shall be determined OPERABLE by verifying secondary-side water level to be greater than or equal to 21.6% at least once per 12 hours.

4.4.1.3.3 At least one reactor coolant or RHR loop shall be verified in operation and circulating reactor coolant at least once per 12 hours.

REACTOR COOLANT SYSTEM

REACTOR COOLANT LOOPS AND COOLANT CIRCULATION

COLD SHUTDOWN - LOOPS FILLED

LIMITING CONDITION FOR OPERATION

3.4.1.4.1 At least one residual heat removal (RHR) loop shall be OPERABLE and in operation*, and either:

a. One additional RHR loop shall be OPERABLE**, or

b. The secondary-side water level of at least two steam generators shall be greater than 21.6%.

APPLICABILITY: MODE 5 with reactor coolant loops filled***.

ACTION:

a. With one of the RHR loops inoperable and with less than the required steam generator water level, immediately initiate corrective action to return the inoperable RHR loop to OPERABLE status or restore the required steam generator water level as soon as possible.

b. With no RHR loop in operation, suspend all operations involving a reduction in boron concentration of the Reactor Coolant System and immediately initiate corrective action to return the required RHR loop to operation.

SURVEILLANCE REQUIREMENTS

4.4.1.4.1.1 The secondary side water level of at least two steam generators when required shall be determined to be within limits at least once per 12 hours.

4.4.1.4.1.2 At least one RHR loop shall be determined to be in operation and circulating reactor coolant at least once per 12 hours.

---

*The RHR pump may be deenergized for up to 1 hour provided: (1) no operations are permitted that would cause dilution of the Reactor Coolant System boron concentration and (2) core outlet temperature is maintained at least 10°F below saturation temperature.

**One RHR loop may be inoperable for up to 2 hours for surveillance testing provided the other RHR loop is OPERABLE and in operation.

***A reactor coolant pump shall not be started unless the secondary water temperature of each steam generator is less than 50°F above each of the Reactor Coolant System cold-leg temperatures.

REACTOR COOLANT SYSTEM

REACTOR COOLANT SYSTEM LEAKAGE

OPERATIONAL LEAKAGE

LIMITING CONDITION FOR OPERATION

3.4.6.2 Reactor Coolant System leakage shall be limited to:

a. No PRESSURE BOUNDARY LEAKAGE,

b. 1 gpm UNIDENTIFIED LEAKAGE,

c. 1 gpm total reactor-to-secondary leakage through all steam generators and 500 gallons per day through any one steam generator,

d. 10 gpm IDENTIFIED LEAKAGE from the Reactor Coolant System,

e. 40 gpm CONTROLLED LEAKAGE at a Reactor Coolant System pressure of 2235 psig ± 20 psig, and

f. 0.5 gpm leakage per nominal inch of valve size up to a maximum of 5 gpm at a Reactor Coolant System pressure of 2235 ± 20 psig from any Reactor Coolant System Pressure Isolation Valve specified in Table 3.4-1.*

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

a. With any PRESSURE BOUNDARY LEAKAGE, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With any Reactor Coolant System leakage greater than any one of the above limits, excluding PRESSURE BOUNDARY LEAKAGE and leakage from Reactor Coolant System Pressure Isolation Valves, reduce the leakage rate to within limits within 4 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With any Reactor Coolant System Pressure Isolation Valve leakage greater than the above limit, isolate the high pressure portion of the affected system from the low pressure portion within 4 hours by use of at least two closed manual or deactivated automatic valves, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

*Test pressures less than 2235 psig but greater than 150 psig are allowed. Observed leakage shall be adjusted for the actual test pressure up to 2235 psig assuming the leakage to be directly proportional to pressure differential to the one-half power.

TABLE 4.4-3

REACTOR COOLANT SPECIFIC ACTIVITY SAMPLE AND ANALYSIS PROGRAM

TYPE OF MEASUREMENT AND ANALYSIS	SAMPLE AND ANALYSIS FREQUENCY	MODES IN WHICH SAMPLE AND ANALYSIS REQUIRED
1. Gross Radioactivity Determination	At least once per 72 hours.	1, 2, 3, 4
2. Isotopic Analysis for DOSE EQUIVALENT I-131 Concentration	1 per 14 days.	1
3. Radiochemical for $\bar{E}$ Determination*	1 per 6 months**	1
4. Isotopic Analysis for Iodine Including I-131, I-133, and I-135	a) Once per 4 hours, whenever the specific activity exceeds 1 μCi/gram DOSE EQUIVALENT I-131 or 100/$\bar{E}$ μCi/gram of gross radioactivity, and	1#, 2#, 3#, 4#, 5#
	b) One sample between 2 and 6 hours following a THERMAL POWER change exceeding 15% of the RATED THERMAL POWER within a 1-hour period.	1, 2, 3

*A radiochemical analysis for $\bar{E}$ shall consist of the quantitative measurement of the specific activity for each radionuclide, except for radionuclides with half-lives less than 10 minutes and all radioiodines, which is identified in the reactor coolant. The specific activities for these individual radionuclides shall be used in the determination of $\bar{E}$ for the reactor coolant sample. Determination of the contributors to $\bar{E}$ shall be based upon those energy peaks identifiable with a 95% confidence level.

**Sample to be taken after a minimum of 2 EFPD and 20 days of POWER OPERATION have elapsed since reactor was last subcritical for 48 hours or longer.

#Until the specific activity of the Reactor Coolant System is restored within its limits.

SURVEILLANCE REQUIREMENTS

4.6.1.2 The containment leakage rates shall be demonstrated at the following test schedule and shall be determined in conformance with the criteria specified in Appendix J of 10 CFR Part 50 using the methods and provisions of ANSI/N45.4-1972:

a. Three Type A tests (Overall Integrated Containment Leakage Rate) shall be conducted at 40 ± 10 month intervals during shutdown at a pressure not less than P_a, 49.6 psig, during each 10-year service period. The third test of each set shall be conducted during the shutdown for the 10-year plant inservice inspection;

b. If any periodic Type A test fails to meet 0.75 L_a, the test schedule for subsequent Type A tests shall be reviewed and approved by the Commission. If two consecutive Type A tests fail to meet 0.75 L_a, a Type A test shall be performed at least every 18 months until two consecutive Type A tests meet 0.75 L_a at which time the above test schedule may be resumed;

c. The accuracy of each Type A test shall be verified by a supplemental test which:

1) Confirms the accuracy of the test by verifying that the supplemental test result, L_c, is in accordance with the following equation:

$$|L_c - (L_{am} + L_o)| \leq 0.25\ L_a$$

where L_{am} is the measured Type A test leakage and L_o is the superimposed leak;

2) Has a duration sufficient to establish accurately the change in leakage rate between the Type A test and the supplemental test; and

3) Requires that the rate at which gas is injected into the containment or bled from the containment during the supplemental test is between 0.75 L_a and 1.25 L_a.

LIMITING CONDITION FOR OPERATION

3.6.1.7 Each containment purge supply and exhaust isolation valve shall be OPERABLE and:

a. Each 36-inch containment shutdown purge supply and exhaust isolation valve shall be closed and locked closed, and

b. The 8-inch containment purge supply and exhaust isolation valve(s) shall be sealed closed except when open for purge system operation for pressure control; for ALARA, respirable, and air quality considerations to facilitate personnel entry; and for surveillance tests that require the valve(s) to be open.

APPLICABILITY: MODES 1*, 2*, 3, and 4.

ACTION:

a. With a 36-inch containment purge supply or exhaust isolation valve open or not locked closed, close and lock closed that valve or isolate the penetration(s) within 4 hours, otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With one or more of the 8-inch containment purge supply or exhaust isolation valves open for reasons other than given in Specification 3.6.1.7.b above, close the open 8-inch valve(s) or isolate the penetration(s) within 4 hours, otherwise be in at least HOT STANDBY within the next 6 hours, and in COLD SHUTDOWN within the following 30 hours.

c. With one or more containment purge supply or exhaust isolation valves having a measured leakage rate in excess of the limits of Specifications 4.6.1.7.2 or 4.6.1.7.3, restore the inoperable valve(s) to OPERABLE status or isolate the affected penetration(s) so that the measured leakage rate does not exceed the limits of Specifications 4.6.1.7.2 or 4.6.1.7.3 within 24 hours and close the purge supply if the affected penetration is the exhaust penetration, otherwise be in at least HOT STANDBY within the next 6 hours, and in COLD SHUTDOWN within the following 30 hours.

*The 8-inch containment purge supply and exhaust isolation valves may not be opened while in MODE 1 or MODE 2 until installations of the narrow-range containment pressure instrument channels and alarms are completed.

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.1 Two independent Containment Spray Systems shall be OPERABLE with each Spray System capable of taking suction from the RWST* and automatically transferring suction to the containment sump.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With one Containment Spray System inoperable, restore the inoperable Spray System to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the inoperable Spray System to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each Containment Spray System shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position is in its correct position;

b. By verifying, that on recirculation flow, each pump develops a differential pressure of greater than or equal to 262 psi when tested pursuant to Specification 4.0.5;

c. At least once per 18 months during shutdown, by:

   1) Verifying that each automatic valve in the flow path actuates to its correct position on a Containment Pressure-Hi-3 test signal, and

   2) Verifying that each spray pump starts automatically on a Containment Pressure-Hi-3 test signal.

d. At least once per 5 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

*In MODE 4, when the Residual Heat Removal System is in operation, an operable flow path is one that is capable of taking suction from the refueling water storage tank upon being manually realigned.

ELECTRIC HYDROGEN RECOMBINERS

LIMITING CONDITION FOR OPERATION

3.6.4.2 Two independent Hydrogen Recombiner Systems shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

With one Hydrogen Recombiner System inoperable, restore the inoperable system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.6.4.2 Each Hydrogen Recombiner System shall be demonstrated OPERABLE:

a. At least once per 6 months by verifying during a Hydrogen Recombiner System functional test that the minimum heater sheath temperature increases to greater than or equal to 850°F within 90 minutes. Upon reaching 850°F, increase the power setting to maximum power for 2 minutes and verify that the power meter reads greater than or equal to 65 kW; and

b. At least once per 18 months by:

1) Performing a CHANNEL CALIBRATION of all recombiner instrumentation and control circuits,

2) Verifying through a visual examination that there is no evidence of abnormal conditions within the recombiner enclosure (i.e., loose wiring or structural connections, deposits of foreign materials, etc.), and

3) Verifying the integrity of all heater electrical circuits by performing a resistance to ground test following the above required functional test. The resistance to ground for any heater phase shall be greater than or equal to 10,000 ohms.

3/4.6.5 CONTAINMENT ENCLOSURE BUILDING

CONTAINMENT ENCLOSURE EMERGENCY AIR CLEANUP SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.5.1 Two independent Containment Enclosure Emergency Air Cleanup Systems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With one Containment Enclosure Emergency Air Cleanup System inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.1 Each Containment Enclosure Emergency Air Cleanup System shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes;

b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:

1) Verifying that the cleanup system satisfies the in-place penetration leakage testing acceptance criteria of less than 0.05% and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978*, and the system flow rate is 2100 cfm ± 10%;

2) Verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978*, meets the laboratory testing criteria

*ANSI N510-1980 shall be used in place of ANSI N510-1975 referenced in Regulatory Guide 1.52, Rev. 2, March 1978.

4.6.5.1b.2 (Continued)

of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978*, by showing a methyl iodide penetration of less than 2.14% when tested at a temperature of 30°C and at a relative humidity of 95% in accordance with ASTM-D3803; and

3) Verifying a system flow rate of 2100 cfm ± 10% during system operation when tested in accordance with ANSI N510-1980.

c. After every 720 hours of charcoal adsorber operation, by verifying, within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978*, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978*, by showing a methyl iodide penetration of less than 2.14% when tested at a temperature of 30°C and at a relative humidity of 95% in accordance with ASTM-D3803.

d. At least once per 18 months by:

1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches Water Gauge while operating the system at a flow rate of 2100 cfm ± 10%,

2) Verifying that the system starts on a Safety Injection test signal,

3) Verifying that the filter cross connect valves can be manually opened, and

4) Verifying that each system produces a negative pressure of greater than or equal to 0.25 inch Water Gauge in the annulus within 4 minutes after a start signal.

e. After each complete or partial replacement of a high efficiency particulate air (HEPA) filter bank, by verifying that the cleanup system satisfies the in-place penetration leakage testing acceptance criteria of less than 0.05% in accordance with ANSI N510-1980 for a dioctyl phthalate (DOP) test aerosol while operating the system at a flow rate of 2100 cfm ± 10%; and

*ANSI N510-1980 shall be used in place of ANSI N510-1975 referenced in Regulatory Guide 1.52, Revision 2, March 1978.

SURVEILLANCE REQUIREMENTS

4.7.1.2.1a. (Continued)

2) Verifying that the steam turbine-driven pump develops a discharge pressure of greater than or equal to 1460 psig at a flow of greater than or equal to 270 gpm when the secondary steam supply pressure is greater than 500 psig. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3;

3) Verifying that the startup feedwater pump develops a discharge pressure of greater than or equal to 1375 psig at a flow of greater than or equal to 425 gpm;

4) Verifying that each non-automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in its correct position;

5) Verifying that each automatic valve in the flow path is in the fully open position whenever the Auxiliary Feedwater System is placed in automatic control or when above 10% RATED THERMAL POWER; and

6) Verifying that valves FW-156 and FW-163 are operable for alignment of the startup feedwater pump to the emergency feedwater header.

b. At least once per 18 months during shutdown by:

1) Verifying that each automatic valve in the flow path actuates to its correct position upon receipt of an Emergency Feedwater System Actuation test signal;

2) Verifying that each emergency feedwater pump starts* as designed automatically upon receipt of an Emergency Feedwater Actuation System test signal;

3) Verifying that with all manual actions, including power source and valve alignment, the startup feedwater pump starts within the required elapsed time; and

4) Verifying that each emergency feedwater control valve closes on receipt of a high flow test signal.

*For the steam turbine-driven pump, when the secondary steam supply pressure is greater than 500 psig.

3/4.7.6 CONTROL ROOM AREA VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.6 Two Control Room Area Ventilation Systems shall be OPERABLE.

APPLICABILITY: All MODES.

ACTION:

MODES 1, 2, 3, and 4:

With one Control Room Area Ventilation System inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

MODES 5 and 6:

a. With one Control Room Area Ventilation System inoperable, restore the inoperable system to OPERABLE status within 7 days or initiate and maintain operation of the remaining OPERABLE Control Room Area Ventilation System in the recirculation mode.

b. With both Control Room Area Ventilation Systems inoperable, suspend all operations involving CORE ALTERATIONS or positive reactivity changes.

SURVEILLANCE REQUIREMENTS

4.7.6 Each Control Room Area Ventilation System shall be demonstrated OPERABLE:

a. At least once per 12 hours by verifying that the Control Room Area Ventilation System is maintaining the temperature of equipment and instrumentation in the control room area below its limiting equipment qualification temperature.

b. At least once per 18 months or after any significant modification to the Control Room Area Ventilation Systems by verifying a system flow rate of 25,700 cfm ± 10% through the air conditioner unit (3A and 3B) and a flow rate of 1200 cfm ± 10% makeup from each intake to the emergency filtration unit with a discharge of 2000 cfm ± 10% from the filtration unit.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the Onsite Class 1E Distribution System shall be:

a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments, indicated power availability, and

b. Demonstrated OPERABLE at least once per 18 months during shutdown by transferring (manually and automatically) unit power supply from the normal circuit to the alternate circuit.

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

a. In accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS by:

1) Verifying the fuel level in the day fuel tank;

2) Verifying the fuel level in the fuel storage tank;

3) Verifying the fuel transfer pump starts and transfers fuel from the storage system to the day tank;

4) Verifying the lubricating oil inventory in storage;

5) Verifying the diesel starts from ambient condition and accelerates to at least 514 rpm in less than or equal to 10 seconds.* The generator voltage and frequency shall be 4160 ± 420 volts and 60 ± 1.2 Hz within 10 seconds* after the start signal. The diesel generator shall be started for this test by using one of the following signals:

a) Manual, or

b) Simulated loss-of-offsite power by itself, or

*All diesel generator starts for the purpose of this surveillance test may be preceded by an engine prelube period. Further, all surveillance tests and all other engine starts for the purpose of this surveillance testing, with the exception of once per 184 days, may also be preceded by warmup procedures (e.g., gradual acceleration and/or gradual loading greater than 60 seconds) as recommended by the manufacturer so that the mechanical stress and wear on the diesel engine is minimized.

SURVEILLANCE REQUIREMENTS

4.8.1.1.2 (Continued)

c) Simulated loss-of-offsite power in conjunction with an SI Actuation test signal, or

d) An SI Actuation test signal by itself.

6) Verifying the generator is synchronized, loaded to greater than or equal to 6083 kW in less than or equal to 120 seconds*, and operates with a load greater than or equal to 6083 kW for at least 60 minutes; and

7) Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.

b. At least once per 31 days and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by checking for and removing accumulated water from the day fuel tank;

c. At least once per 31 days by checking for and removing accumulated water from the fuel oil storage tanks;

d. By sampling new fuel oil in accordance with ASTM-D4057-81 prior to addition to storage tanks and:

1) By verifying in accordance with the tests specified in ASTM-D975-81 prior to addition to the storage tanks that the sample has:

a) An API Gravity of within 0.3 degree at 60°F, or a specific gravity of within 0.0016 at 60/60°F, when compared to the supplier's certificate, or an absolute specific gravity at 60/60°F of greater than or equal to 0.81 but less than or equal to 0.89, or an API gravity of greater than or equal to 28 degrees but less than or equal to 42 degrees;

*All diesel generator starts for the purpose of this surveillance test may be preceeded by an engine prelube period. Further, all surveillance tests and all other engine starts for the purpose of this surveillance testing, with the exception of once per 184 days, may also be preceded by warmup procedures (e.g., gradual acceleration and/or gradual loading greater than 60 seconds) as recommended by the manufacturer so that the mechanical stress and wear on the diesel engine is minimized.

SURVEILLANCE REQUIREMENTS

4.8.1.1.2 (Continued)

b) A kinematic viscosity at 40°C of greater than or equal to 1.9 centistokes, but less than or equal to 4.1 centistokes, if gravity was not determined by comparison with the supplier's certification;

c) A flash point greater than or equal to 125°F; and

d) A clear and bright appearance with proper color when tested in accordance with ASTM-D4176-82.

2) By verifying within 30 days of obtaining the sample that the other properties specified in Table 1 of ASTM-D975-81 are met when tested in accordance with ASTM-D975-81 except that the analysis for sulfur may be performed in accordance with ASTM-D1552-79 or ASTM-D2622-82.

e. At least once every 31 days:

1) By obtaining a sample of fuel oil in accordance with ASTM-D2276-78, and verifying that total particulate contamination is less than 10 mg/liter when checked in accordance with ASTM-D2276-78, Method A, and

2) By visually inspecting the lagging in the area of the flanged joints on the silencer outlet of the diesel exhaust system for leakage (also after an extended operation of greater than 24 hours).

f. At least once per 18 months, during shutdown, by:

1) Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service;

2) Verifying the generator capability to reject a load of greater than or equal to 671 kW while maintaining voltage at 4160 ± 420 volts and frequency at 60 ± 4.0 Hz;

3) Verifying the generator capability to reject a load of 6083 kW without tripping. The generator voltage shall not exceed 4784 volts during and following the load rejection;

4) Simulating a loss-of-offsite power by itself, and:

ELECTRICAL POWER SYSTEMS

ELECTRICAL EQUIPMENT PROTECTIVE DEVICES

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES AND PROTECTIVE DEVICES FOR CLASS 1E POWER SOURCES CONNECTED TO NON-CLASS 1E CIRCUITS

LIMITING CONDITION FOR OPERATION

3.8.4.2 Each containment penetration conductor overcurrent protective device and each protective device for Class 1E power sources connected to non-Class 1E circuits shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, 4, 5,* and 6.*

ACTION:

a. With one or more of the containment penetration conductor overcurrent protective device(s) inoperable:

   1) Restore the protective device(s) to OPERABLE status or deenergize the circuit(s) by tripping the associated circuit breaker or racking out or removing the inoperable protective device within 72 hours, declare the affected system or component inoperable, and verify the circuit breaker to be tripped or the inoperable protective device to be racked out or removed at least once per 7 days thereafter; the provisions of Specification 3.0.4 are not applicable to overcurrent devices in circuits which have their circuit breakers tripped, or their inoperable protective devices racked out, or removed; or

   2) Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With one or more of the Class 1E power source protective device(s) inoperable, restore the protective device(s) to OPERABLE status or deenergize the circuit(s) by tripping the circuit breaker or racking out or removing the inoperable protective device within 72 hours, declare the affected component inoperable, and verify the circuit breaker to be tripped or the inoperable protective device to be racked out or removed at least once per 7 days thereafter; the provisions of Specification 3.0.4 are not applicable to overcurrent devices in circuits which have their circuit breakers tripped, or their inoperable protective devices racked out, or removed.

SURVEILLANCE REQUIREMENTS

4.8.4.2 Each containment penetration conductor overcurrent and Class 1E power source protective device shall be demonstrated OPERABLE:

a. At least once per 18 months:

   1) By verifying that the medium voltage 13.8-kV and 4.16-kV circuit breakers are OPERABLE by selecting, on a rotating basis, at least one of the circuit breakers, and performing the following:

*Only for Class 1E power source protective devices.

4.8.4.2.a.1) (Continued)

a) A CHANNEL CALIBRATION of the associated protective relays (because of the large currents involved, it is impractical to inject primary side signals to current transformers; therefore, the channel calibration will be performed by injecting a signal on the secondary side of those transformers at their test plug),

b) An integrated system functional test which includes simulated automatic actuation of the system and verifying that each relay and associated circuit breakers and control circuits function as designed, and

c) For each circuit breaker found inoperable during these functional tests, one additional circuit breaker of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.

2) By selecting and functionally testing a representative sample of at least 10% of each type of lower voltage circuit breakers and overload devices. Circuit breakers and overload devices selected for functional testing shall be selected on a rotating basis.

Testing of air circuit breakers shall consist of injecting a current with a value equal to 300% of the pickup of the long-time delay trip element and 150% of the pickup of the short-time delay trip element. The instantaneous element shall be tested by injecting a current equal to ±20% of the pickup value of the element.

Testing of thermal magnetic molded-case circuit breakers shall consist of injecting a current with a value equal to 300% of the circuit breaker trip rating and -25% to +40% of the circuit breaker instantaneous trip range or setpoint.

Testing of combination starters (a magnetic only molded-case circuit breaker in series with a motor starter and integral overload device) shall consist of injecting a current with a value equal to -25% to +40% of the circuit breaker instantaneous trip setpoint, and 200% and 300% of the thermal overload device trip rating to the respective devices.

Circuit breakers and/or overload devices found inoperable during functional testing shall be restored to OPERABLE status prior to resuming operation. For each circuit breaker and or overload devices found inoperable during these functional tests, an additional representative sample of at least 10% of all the circuit breakers and or overload devices of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers and or overload devices of that type have been functionally tested.

4.8.4.2.a (Continued)

3) Corrective actions for any generic degradation of overcurrent protective devices, such as setpoint drift, manufacturing deficiencies, material defects, etc., shall be applicable to all (Class 1E and non-Class 1E) protective devices of identical design.

b. At least once per 60 months by subjecting each circuit breaker to an inspection and preventive maintenance in accordance with procedures prepared in conjunction with its manufacturer's recommendations.

RADIOACTIVE EFFLUENTS

GASEOUS EFFLUENTS

EXPLOSIVE GAS MIXTURE - SYSTEM

LIMITING CONDITION FOR OPERATION

3.11.2.5 The concentration of oxygen in the GASEOUS RADWASTE TREATMENT SYSTEM shall be limited to less than or equal to 2% by volume.

APPLICABILITY: At all times.

ACTION:

a. With the concentration of oxygen in the GASEOUS RADWASTE TREATMENT SYSTEM greater than 2% by volume, reduce the oxygen concentration to the above limit within 48 hours unless the hydrogen concentration is verified to be less than 4% by volume.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.5 The concentration of hydrogen or oxygen in the GASEOUS RADWASTE TREATMENT SYSTEM shall be determined to be within the above limit by continuously monitoring the waste gases in the GASEOUS RADWASTE TREATMENT SYSTEM with the hydrogen or oxygen monitors required OPERABLE by Table 3.3-13 of Specification 3.3.3.10.

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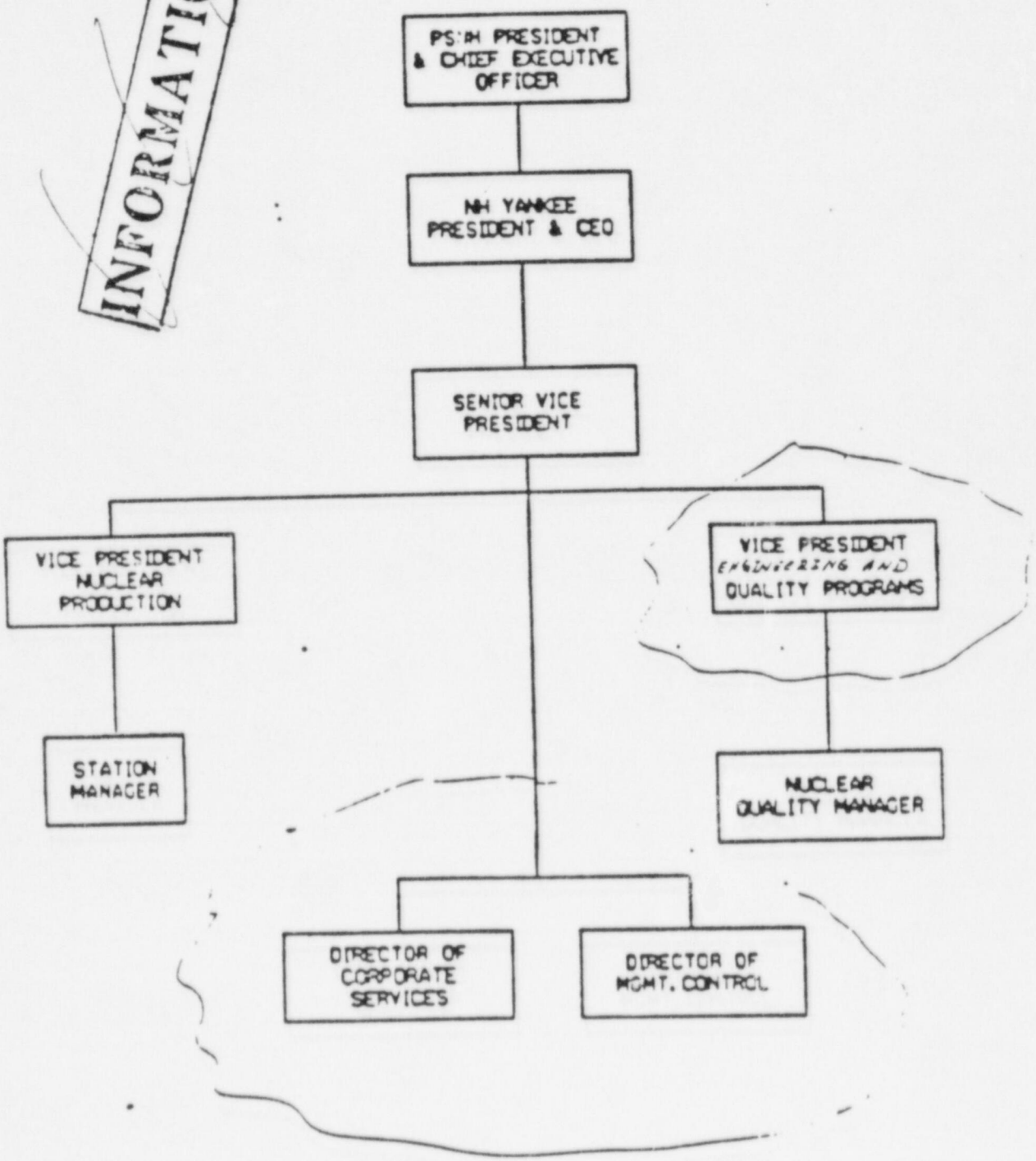
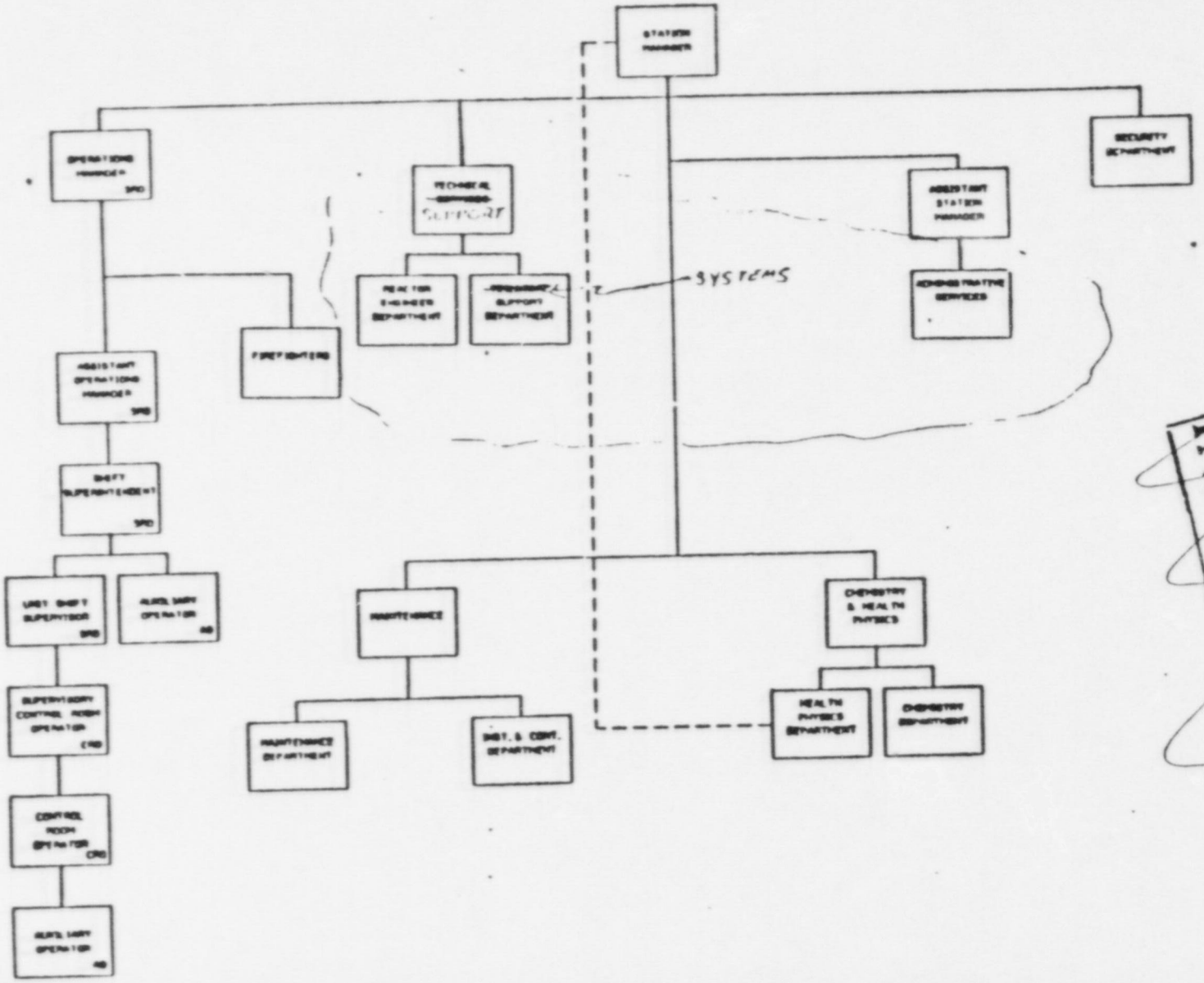


FIGURE 6.2-1

OFFSITE ORGANIZATION



INFORMATION ONLY

FIGURE 6.2-2
STATION ORGANIZATION

6.2.3 INDEPENDENT SAFETY ENGINEERING GROUP (ISEG)

FUNCTION

6.2.3.1 The ISEG shall function to examine station operating characteristics, NRC issuances, industry advisories, Licensee Event Reports, and other sources of station design and operating experience information, including units of similar design, which may indicate areas for improving station safety. The ISEG shall make detailed recommendations for revised procedures, equipment modifications, maintenance activities, operations activities, or other means of improving station safety to the Executive Assistant to the Senior Vice President.

COMPOSITION

6.2.3.2 The ISEG shall be composed of at least five, dedicated, full-time engineers located on site. Each shall have a bachelor's degree in engineering or related science and at least 2 years professional level experience in his field, at least 1 year of which experience shall be in the nuclear field.

RESPONSIBILITIES

6.2.3.3 The ISEG shall be responsible for maintaining surveillance of station activities to provide independent verification* that these activities are performed correctly and that human errors are reduced as much as practical.

RECORDS

6.2.3.4 Records of activities performed by the ISEG shall be prepared, maintained, and forwarded each calendar month to the Executive Assistant to the Senior Vice President.

6.2.4 SHIFT TECHNICAL ADVISOR

6.2.4.1 The Shift Technical Advisor shall provide advisory technical support to the Control Room Commander in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the station.

6.3 TRAINING

6.3.1 A retraining and replacement licensed training program for the station staff shall be maintained under the direction of the Training Center Manager and shall meet or exceed the requirements and recommendations of Section 5.5 of ANSI N18.1-1971 and Appendix A of 10 CFR Part 55 and the supplemental requirements specified in Sections A and C of Enclosure 1 of the NRC letter dated March 28, 1980 to all licensees, and shall include familiarization with relevant industry operational experience.

*Not responsible for sign-off function.

PROCEDURES AND PROGRAMS

6.7.4d. (Continued)

1) Training of personnel, and

2) Procedures for monitoring.

e. Post-Accident Sampling

A program that will ensure the capability to obtain and analyze reactor coolant, radioactive iodines and particulates in plant gaseous effluents, and containment atmosphere samples under accident conditions. The program shall include the following:

1) Training of personnel,

2) Procedures for sampling and analysis, and

3) Provisions for maintenance of sampling and analysis equipment.

f. Accident Monitoring Instrumentation*

A program which will ensure the capability to monitor plant variables and systems operating status during and following an accident. This program shall include those instruments provided to indicate system operating status and furnish information regarding the release of radioactive materials (Category 2 and 3 instrumentation as defined in Regulatory Guide 1.97, Revision 2) and provide the following:

1) Preventive maintenance and periodic surveillance of instrumentation,

2) Pre-planned operating procedures and backup instrumentation to be used if one or more monitoring instruments become inoperable, and

3) Administrative procedures for returning inoperable instruments to OPERABLE status as soon as practicable.

6.8 REPORTING REQUIREMENTS

ROUTINE REPORTS

6.8.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted to the Regional Administrator of the Regional Office of the NRC unless otherwise noted.

STARTUP REPORT

6.8.1.1 A summary report of station startup and power escalation testing shall be submitted following: (1) receipt of an Operating License, (2) amendment to the license involving a planned increase in power level, (3) installation of fuel that has a different design or has been manufactured by a different fuel supplier, and (4) modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the station.

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*Implementation of this specification shall take effect when plant goes above 5% power for the first time.

The Startup Report shall address each of the tests identified in the Final Safety Analysis Report and shall include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall also be described. Any additional specific details required in license conditions based on other commitments shall be included in this report.

Startup Reports shall be submitted within: (1) 90 days following completion of the Startup Test Program, (2) 90 days following resumption or commencement of commercial power operation, or (3) 9 months following initial criticality, whichever is earliest. If the Startup Report does not cover all three events (i.e., initial criticality, completion of Startup Test Program, and resumption or commencement of commercial operation), supplementary reports shall be submitted at least every 3 months until all three events have been completed.

ANNUAL REPORTS*

6.8.1.2 Annual Reports covering the activities of the station as described below for the previous calendar year shall be submitted prior to March 1 of each year. The initial report shall be submitted prior to March 1 of the year following initial criticality.

Reports required on an annual basis shall include:

a. A tabulation on an annual basis of the number of station, utility, and other personnel (including contractors) receiving exposures greater than 100 mrem/yr and their associated man-rem exposure according to work and job functions** (e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance [describe maintenance], waste processing, and refueling). The dose assignments to various duty functions may be estimated based on pocket dosimeter, thermoluminescent dosimeter (TLD), or film badge measurements. Small exposures totalling less than 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole-body dose received from external sources should be assigned to specific major work functions;

b. The results of specific activity analyses in which the primary coolant exceeded the limits of Specification 3.4.8. The following information shall be included: (1) Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded (in graphic and tabular format); (2) Results of the last isotopic analysis for radioiodine performed prior to exceeding the limit, results of analysis while limit was exceeded and results of one analysis after the radioiodine activity was reduced to less than limit. Each result should include date and time of sampling and the radioiodine concentrations; (3) Clean-up flow history starting 48 hours prior to the first sample in which the limit was exceeded; (4) Graph of the I-131 concentration (μCi/gm) and one other radioiodine isotope concentration (μCi/gm) as a function of time for the

*A single submittal may be made for a multiple unit station. The submittal should combine those sections that are common to all units at the station.

**This tabulation supplements the requirements of §20.407 of 10 CFR Part 20.

6.8.1.2 (Continued)

duration of the specific activity above the steady-state level; and (5) The time duration when the specific activity of the primary coolant exceeded the radioiodine limit.

c. Documentation of all challenges to the pressurizer power-operated relief valves (PORVs) and safety valves.

ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT***

6.8.1.3 Routine Annual Radiological Environmental Operating Reports covering the operation of the station during the previous calendar year shall be submitted prior to May 1 of each year. The initial report shall be submitted prior to May 1 of the year following initial criticality and shall include copies of the preoperational Radiological Environmental Program of the unit for at least 2 years prior to criticality.

The Annual Radiological Environmental Operating Reports shall include summaries, interpretations, and an analysis of trends of the results of the radiological environmental surveillance activities for the report period, including a comparison with preoperational studies, with operational controls, as appropriate, and with previous environmental surveillance reports, and an assessment of the observed impacts of the plant operation on the environment. The reports shall also include the results of the Land Use Census required by Specification 3.12.2.

The Annual Radiological Environmental Operating Reports shall include the results of analysis of all radiological environmental samples and of all environmental radiation measurements taken during the period pursuant to the locations specified in the table and figures in the Offsite Dose Calculation Manual, as well as summarized and tabulated results of these analyses and measurements in the format of the table in the Radiological Assessment Branch Technical Position, Revision 1, November 1979. In the event that some individual results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

The reports shall also include the following: a summary description of the Radiological Environmental Monitoring Program; at least two legible maps* covering all sampling locations keyed to a table giving distances and directions from the centerline of one reactor; the results of licensee participation in the Interlaboratory Comparison Program and the corrective action taken if the specified program is not being performed as required by Specification 3.12.3; reason for not conducting the Radiological Environmental Monitoring Program as required by specification 3.12.1, and discussion of all deviations from the sampling schedule; discussion of environmental sample measurements that exceed

*One map shall cover locations near the SITE BOUNDARY; the more distant locations shall be covered by one or more additional maps.

**A single submittal may be made for a multiple unit station. The submittal should combine those sections that are common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit.

***A single submittal may be made for a multiple unit station.

6.8.1.3 (Continued)

the reporting levels but are not the result of plant effluents, pursuant to ACTION b. of Specification 3.12.1; and discussion of all analyses in which the LLD required was not achievable.

SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT**

6.8.1.4 Routine Semiannual Radioactive Effluent Release Reports covering the operation of the station during the previous 6 months of operation shall be submitted within 60 days after January 1 and July 1 of each year. The period of the first report shall begin with the date of initial criticality.

The Semiannual Radioactive Effluent Release Reports shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the station as outlined in Regulatory Guide 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants," Revision 1, June 1974, with data summarized on a quarterly basis following the format of Appendix B thereof. For solid wastes, the format for Table 3 in Appendix B shall be supplemented with three additional categories: class of solid wastes (as defined by 10 CFR Part 61), type of container (e.g., LSA, Type A, Type B, Large Quantity) and SOLIDIFICATION agent or absorbent (e.g., cement).

The Semiannual Radioactive Effluent Release Report to be submitted within 60 days after January 1 of each year shall include an annual summary of hourly meteorological data collected over the previous year**. This annual summary may be either in the form of an hour-by-hour listing on magnetic tape of wind speed, wind direction, atmospheric stability, and precipitation (if measured), or in the form of joint frequency distributions of wind speed, wind direction, and atmospheric stability.* This same report shall include an assessment of the radiation doses due to the radioactive liquid and gaseous effluents released from the unit or station during the previous calendar year. This same report shall also include an assessment of the radiation doses from radioactive liquid and gaseous effluents to MEMBERS OF THE PUBLIC due to their activities inside the SITE BOUNDARY (Figure 5.1-3) during the report period. All assumptions used in making these assessments, i.e., specific activity, exposure time, and location, shall be included in these reports. The meteorological conditions concurrent with the time of release of radioactive materials in gaseous effluents, as determined by sampling frequency and measurement, shall be used for determining the gaseous pathway doses. The assessment of radiation doses shall be performed in accordance with the methodology and parameters in the OFFSITE DOSE CALCULATION MANUAL (ODCM).

The Semiannual Radioactive Effluent Release Report to be submitted within 60 days after January 1 of each year shall also include an assessment of radiation doses to the likely most exposed MEMBER OF THE PUBLIC from reactor releases and other nearby uranium fuel cycle sources, including doses from primary effluent pathways and direct radiation, for the previous calendar year

*In lieu of submission with the Semiannual Radioactive Effluent Release Report, the licensee has the option of retaining this summary of required meteorological data on site in a file that shall be provided to the NRC upon request.

**The dose calculations may be reported in a supplement submitted 30 days later.

SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

6.8.1.4 (Continued)

to show conformance with 40 CFR Part 190, "Environmental Radiation Protection Standards for Nuclear Power Operation." Acceptable methods for calculating the dose contribution from liquid and gaseous effluents are given in Regulatory Guide 1.109, Rev. 1, October 1977.

The Semiannual Radioactive Effluent Release Reports shall include a list and description of unplanned releases from the site to UNRESTRICTED AREAS of radioactive materials in gaseous and liquid effluents made during the reporting period.

The Semiannual Radioactive Effluent Release Reports shall include any changes made during the reporting period to the PROCESS CONTROL PROGRAM and the ODCM, pursuant to Specifications 6.12 and 6.13, respectively, as well as any major change to Liquid, Gaseous, or Solid Radwaste Treatment Systems pursuant to Specification 6.14. It shall also include a listing of new locations for dose calculations and/or environmental monitoring identified by the Land Use Census pursuant to Specification 3.12.2.

The Semiannual Radioactive Effluent Release Reports shall also include the following: an explanation as to why the inoperability of liquid or gaseous effluent monitoring instrumentation was not corrected within the time specified in Specification 3.3.3.10 or 3.3.3.11, respectively; and description of the events leading to liquid holdup tanks or gas storage tanks exceeding the limits of Specification 3.11.1.4 or 3.11.2.6, respectively.

MONTHLY OPERATING REPORTS

6.8.1.5 Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis to the Director, Office of Resource Management, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, with a copy to the Regional Administrator of the Regional Office of the NRC, no later than the 15th of each month following the calendar month covered by the report.

RADIAL PEAKING FACTOR LIMIT REPORT

6.8.1.6 The F_{xy} limits for RATED THERMAL POWER (F_{xy}^{RTP}) shall be provided to the NRC Regional Administrator with a copy to Director of Nuclear Reactor Regulation, Attention: Chief, Reactor Systems Branch, DPL-A, U.S. Nuclear Regulatory Commission, Washington, D. C. 20555, for all core planes containing Bank "D" control rods and all unrodded core planes and the plot of predicted ($F_q^T \cdot P_{Rel}$) vs Axial Core Height with the limit envelope at least 60 days prior to each cycle initial criticality unless otherwise approved by the Commission by letter. In addition, in the event that the limit should change requiring a new substantial or an amended submittal to the Radial Peaking Factor Limit Report, it will be submitted 60 days prior to the date the limit would become effective unless otherwise approved by the Commission by letter. Any information needed to support F_{xy}^{RTP} will be by request from the NRC and need not be included in this report.