

**UNITED STATES OF AMERICA**  
**NUCLEAR REGULATORY COMMISSION**

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**Title:            BRIEFING ON PROPOSED RULE - REVISION TO  
APPENDIX J TO 10 CFR PART 50 - PUBLIC  
MEETING**

**Location:        Rockville, Maryland**

**Date:            Thursday, December 8, 1994**

**Pages:           1 - 58**

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2 NUCLEAR REGULATORY COMMISSION  
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6 BRIEFING ON PROPOSED RULE - REVISION TO  
7 APPENDIX J TO 10 CFR PART 50  
8 PUBLIC MEETING  
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10  
11 Nuclear Regulatory Commission  
12 One White Flint North  
13 Rockville, Maryland  
14

15 Thursday, December 8, 1994  
16

17 The Commission met in open session, pursuant to  
18 notice, at 2:15 p.m., Ivan Selin, Chairman, presiding.  
19

20 COMMISSIONERS PRESENT:  
21

22 IVAN SELIN, Chairman of the Commission  
23 KENNETH C. ROGERS, Commissioner  
24 E. GAIL de PLANQUE, Commissioner  
25

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1 STAFF SEATED AT THE COMMISSION TABLE:

2

3 KAREN D. CYR, General Counsel

4 JOHN C. HOYLE, Acting Secretary

5 JAMES TAYLOR, Executive Director for Operations

6 WILLIAM RUSSELL, Director, NRR

7 ASHOK THADANI, Associate Director for Inspection and

8 Technical Assessment, NRR

9 RICHARD LOBEL, Senior Reactor Engineer, NRR

10 THEMIS SPEIS, Deputy Director, RES

11 JOSEPH MURPHY, Special Assistant, RES

12 MONIDEEP DEY, Senior Task Manager, Division of Safety Issue

13 Resolution, RES

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## P R O C E E D I N G S

[2:15 p.m.]

CHAIRMAN SELIN: Good afternoon, ladies and gentlemen.

The Commission is pleased to welcome members of the staff to brief us on the proposed revision to Appendix J, the primary reactor leakage testing for water-cooled power reactors in Part 50.

In 1992, the NRC proposed that the existing containment testing rule should be considered a potential candidate for modification in order to make regulation less prescriptive and to advance performance-oriented and risk-based regulations. On this basis, the staff analyzed the public comments on the proposal and the Commission announced its plans to initiate rulemaking for developing the performance-oriented regulations.

At a public workshop in 1993, the staff invited discussion of specific proposals for modifying containment testing requirements based on the industry and public comments. I understand from looking -- I peeked, Mr. Taylor. I looked at the slides. We know that you're proposing revision to Appendix G to allow licensees to have an option to adopt performance-oriented and risk-based approach to containment testing.

Copies of the viewgraphs are available.

1 Commissioner Rogers?

2 COMMISSIONER ROGERS: Nothing.

3 CHAIRMAN SELIN: Commissioner de Planque?

4 Mr. Taylor?

5 MR. TAYLOR: Good afternoon. As you noted, Mr.  
6 Chairman, this rule is performance-based in accordance with  
7 our thinking on approaching rulemaking on this basis. We do  
8 believe that this rule will have only a marginal impact on  
9 safety while concentrating NRC and licensee resources on  
10 more safety significant aspects of containment leak rate  
11 testing.

12 The rulemaking will be conducted in two phases.  
13 The first phase deals exclusively with containment leakage  
14 rate testing. The second phase will focus on a reevaluation  
15 of allowable containment leakage rates. Our discussion  
16 today will concentrate on the first phase, that is leakage  
17 rate testing.

18 At the table are Themis Speis, Joe Murphy and Moni  
19 Dey from the Office of Research, Bill Russell, Rich Lobel  
20 and Ashok Thadani from NRR. Joe Murphy will start the  
21 briefing.

22 MR. MURPHY: Thank you.

23 We have covered the purpose and the -- have the  
24 first viewgraph, please.

25 [Slide]

1           MR. MURPHY: We believe the change we're proposing  
2       has a negligible effect on safety than the significant  
3       potential for burden reduction. We're here to ask the  
4       Commission's approval of our notice for proposed rulemaking.  
5       Buried in that is a question for the public in the form of  
6       essentially an advanced notice of proposed rulemaking on  
7       phase 2 to request suggestions as to how to put the  
8       containment function on a more performance basis. This  
9       would include, but not necessarily be limited to, the  
10      question of the containment leakage rate itself. Finally,  
11      the NRR representatives will discuss the implementation of  
12      the proposed testing frequency changes.

13           In summary, what we have is a rule that is less  
14      prescriptive and more performance based.

15           Next viewgraph, please.

16           [Slide]

17           MR. MURPHY: There will be a longer interval  
18      between tests, assuming that the performance remains good.  
19      We believe that with this rule we'll continue to provide  
20      reasonable assurance that the containment function is  
21      adequately maintained. There's no increase in risk to the  
22      public associated with this extension of intervals. The  
23      calculated change in risk appears in the third significant  
24      figure, which is essentially meaningless. I do want to  
25      stress that our proposed approach is optional. The current

1 provisions of Appendix J would still be available if the  
2 licensee wished to use them.

3 CHAIRMAN SELIN: I have a question on that, Mr.  
4 Murphy. Why would we want that to be optional? Is it for  
5 legal grounds so we don't have to do a backfit analysis or  
6 is it because there are licensees who would prefer not to  
7 take the trouble of changing the current position?

8 DR. DEY: Can I answer that, Joe?

9 I think it's primarily the latter, that licensees  
10 would have institutionalized programs and they wouldn't want  
11 to change. Therefore, we made it voluntary.

12 CHAIRMAN SELIN: Is there any resource implication  
13 in our part accepting both approaches? Would we be able to  
14 save resources if we actually went to the new approach on a  
15 mandatory basis?

16 MR. RUSSELL: I think it's probably resource  
17 neutral for us. There could be some request for amendments  
18 to implement which we would expect a number of licensees  
19 would request that, but we've identified appropriate changes  
20 to the tech specs to do that. We'll be briefing you on  
21 those today. That can be done in conjunction with a tech  
22 spec conversion. So, we could identify in, for example, the  
23 new standard tech specs, an option with or without the  
24 revised testing. I would expect if someone were coming in  
25 to modify the tech specs they'd want to take advantage of



1     this. I think the benefit really is in burden reduction,  
2     having to do fewer B&C tests and only doing type A tests  
3     once each ten years.

4             MR. MURPHY: Can I have the next viewgraph,  
5     please?

6             [Slide]

7             MR. MURPHY: On phase 2 of the program we'll  
8     consider the performance-based rule to maintain the  
9     containment function in its entirety. There we'll be  
10    considering how you might give credit for on-line  
11    monitoring, either separate on-line monitoring systems or  
12    several plants have features with them today that  
13    effectively provide information that allows us to determine  
14    whether there is a large hole in the containment. I'm  
15    thinking something like the subatmospheric containments by  
16    maintaining the containment at a negative pressure and know  
17    that there's no major fault in the containment system.

18            We'll be considering revising the allowable  
19    leakage rate requirements, but in doing so there's a number  
20    of things we have to consider. One is its effect on public  
21    risk and another is its effect on occupational risk, the  
22    doses to the control room during an accident and its impact  
23    on the licensing bases and other regulations. Phase 2 will  
24    be, I think, a much more difficult task than the phase 1  
25    work we're talking about today.

1           As I mentioned, we are soliciting options or  
2     opinions on how to progress in the phase 2 in this  
3     rulemaking package. We believe that the proposal we have  
4     will either reduce occupational exposures in the significant  
5     reduction in industry's test costs.

6           With this, I'd like to turn over the detailed  
7     description of the proposal to Dr. Moni Dey from our staff.

8           DR. DEY: Thank you, Joe.

9           Could I have slide 5, please?

10          [Slide]

11          DR. DEY: Slide 5 presents a summary of the  
12     changes to Appendix J. The proposed revision essentially  
13     allows testing to be based on performance. The intervals of  
14     the test that show good performance may only be extended.  
15     This is compared to current Appendix J requirements that are  
16     prescriptive and require testing at fixed intervals,  
17     irregardless of performance. Current Appendix J also  
18     contains the testing frequencies and detailed test methods  
19     that have led to many exemptions.

20          The integrated leak rate test, also called the  
21     IRLT, and the type A test measures the leakage of the  
22     overall containment system. The interval for this test may  
23     be extended from current three tests per ten years to one  
24     test in ten years based on good performance. Good  
25     performance is defined as two successful previous tests. I

1 will describe the basis for this at a later slide when I  
2 present our technical findings.

3 Visual examinations are currently coupled to the  
4 type A test. They consist of a walk through of the  
5 containment to detect deterioration of the containment  
6 structure. The visual examination we've decoupled from the  
7 type A test in the proposed rule. This is due to the  
8 usefulness of these inspections to detect any early signs of  
9 degradation. So, the staff has maintained the frequency at  
10 three times every ten years as is currently required.

11 For the local leakage rate tests or LLRTs, there  
12 are two types of these tests. The type B tests are mainly  
13 for electrical penetrations and air locks. The type C tests  
14 are for containment isolation valves. The proposed revision  
15 allows extension of the type B test for electrical  
16 penetrations from one test every two years to one test every  
17 ten years, based on good performance. Type B tests for air  
18 locks may be extended from one every six months to one every  
19 two years. The type C tests can be extended from one every  
20 two years to one every five years. Again, based on good  
21 performance and also the safety significance of the  
22 isolation valves. Good performance is defined as for the  
23 type A test by two successful previous tests.

24 We believe the proposed revision will allow a  
25 focus on safety significant and problem components compared

1 to a uniform treatment of components as currently required.  
2 Also, the proposed rule requires several important elements  
3 of a performance-oriented program. These are establishing  
4 performance goals, considering performance factors and  
5 evaluating test results and comparing to previous test  
6 history. These activities will be new for licensees in this  
7 area and we expect it will enhance the overall testing  
8 program. At the same time, the proposed performance-  
9 oriented approach also allows licensees considerable  
10 flexibility in implementing the safety objectives in the  
11 rule.

12 The acceptance criteria for the test, the  
13 allowable leakage rate, known as LA is contained in the  
14 technical specifications currently. It's not in the rule.  
15 We don't propose to change that at this time, as Joe  
16 mentioned. However, in the statement of considerations for  
17 the proposed rule, we've described our understanding of the  
18 significance of containment leakage to public risk. We have  
19 also used this information to assess the risk impact of  
20 modifying the test frequencies and I will describe that  
21 later.

22 One final note on comparing the proposed revision  
23 with the current requirements. The criteria for  
24 establishing the test frequencies are contained in a reg.  
25 guide which endorses an industry guideline as compared to

1 specific frequencies are contained in the current Appendix  
2 J.

3 Can I have slide 6, please?

4 [Slide]

5 DR. DEY: Slide 6 summarizes the technical  
6 findings that support the proposed rule. The staff has  
7 conducted extensive analysis of historical plant testing  
8 data and risk assessment of the alternative testing  
9 requirements. These studies are included in the draft NUREG  
10 document we have submitted in the SECY paper, attached to  
11 the SECY paper. This study was conducted as part of our  
12 effort to adopt risk-based approaches.

13 Our analysis of 770 reactor years of operating  
14 history for 110 reactors showed only about three percent of  
15 leakages are detected by ILRTs. Also, these leakages were  
16 marginally above the allowable leakage rate. This is  
17 because the ILRT is basically a confirmatory test after the  
18 local leakage rate tests have been conducted, thus extending  
19 the interval up to ten years, the IRLT interval to ten years  
20 should yield a marginal impact on safety. I will discuss  
21 our risk impact analyses in more detail at a later slide.

22 NEI also conducted an analysis for 31 units and  
23 came to similar conclusions for the IRLT historical  
24 database.

25 CHAIRMAN SELIN: Dr. Dey, let me ask you the same

1 question I asked at the beginning. Why don't we make this  
2 change mandatory? I really don't -- it actually improves  
3 safety. It can be done by a block change. You don't need  
4 an individual license amendment for each piece. Why are we  
5 do reticent? Is there any downside to just saying this is  
6 how it will be done in the future? Normally I'm somewhat  
7 skeptical about prescribing changes, but this is an  
8 overwhelming case that says that the accident risk is  
9 untouched. These are not very useful tests. Exposure would  
10 be less. I mean even not taking the cost into account, it  
11 seems to be a dominant case and wouldn't be that hard to  
12 implement. You don't need to -- I wouldn't think you'd need  
13 to process a license amendment for each plant and it would  
14 just make our inspection protocol that much simpler.

15 MR. RUSSELL: I guess I can compare this to some  
16 other cases where we've made changes available on a  
17 voluntary basis the issue of doing monthly testing versus  
18 quarterly testing for engineered safeguards features,  
19 reactor protection systems, et cetera. There was quite a  
20 period of time for licensees to phase that in and there are  
21 up front costs associated with changing procedures,  
22 modifying things, et cetera. So, this scheme with time, we  
23 expect that most licensees would do this. But this would  
24 allow them to determine the timing of doing that at the cost  
25 of potentially having to do additional testing between

1 outages.

2 CHAIRMAN SELIN: Flexibility and implementation is  
3 different from having it as an option. I mean I'm looking  
4 at this and the thing that strikes me so much is the  
5 reduction of personnel exposure. In effect, people are  
6 exposing their workers to unnecessary radiation in order to  
7 comply with our rules. I don't want to overstate my point.  
8 I really haven't studied the implementation of this, but I  
9 wonder if we're not just being too modest in the objectives.

10 MR. RUSSELL: We could certainly look at that and  
11 request comments during the proposed rulemaking as to  
12 whether it should be optional or it should be mandatory.

13 CHAIRMAN SELIN: I'll start drafting my comments.

14 MR. TAYLOR: We've got one.

15 COMMISSIONER ROGERS: Just on this point, that  
16 only three percent of the identified leaks were detectable  
17 by the integrated leak rate test, did you look at what those  
18 kind of leaks were and how they were identified, that three  
19 percent? Does that suggest that there's a better way to  
20 look for leaks than the integrated leak rate testing?

21 DR. DEY: I think it suggests that the ILRTs are  
22 confirmatory tests after the local leak rate tests are done  
23 and that their usefulness is in that respect, that it  
24 confirms your leak type, but it doesn't uncover any  
25 additional leakages.

1 COMMISSIONER ROGERS: I see.

2 DR. DEY: If I can continue on the visual  
3 inspections. We found that these are useful for early  
4 detection of structural deterioration. Therefore, the staff  
5 is not prepared to approve a change in the visual inspection  
6 frequency at this stage.

7 For the LLRTs or the type B and C tests, the staff  
8 conducted a detailed analysis of data from North Anna and  
9 Grand Gulf Nuclear Power Stations. NEI also provided us  
10 with a summary of data from 31 units. Type B tests uncover  
11 about 12 percent of the leakages on average. For LLRTs of  
12 electrical penetrations, we found very few failures. On  
13 average, 98 percent of the penetrations have never failed  
14 the leakage test. In some plants, for example North Anna,  
15 there hasn't been a failure in 27 unit years of operation.

16 CHAIRMAN SELIN: Is the testing completely non-  
17 destructive or does it have any negative impact on what is  
18 being tested?

19 DR. DEY: I don't think it will have any negative  
20 impact on the penetration other than the cost and exposure  
21 of conducting the tests.

22 Therefore, we believe increasing the interval to  
23 ten years for these tests would have a marginal impact on  
24 risk. For LLRTs of air locks, the performance is about  
25 equal to electrical penetrations. But some leakages when



1 they occur can be larger. Given this and the safety  
2 significance of air locks, the staff proposes to improve the  
3 extension of the interval to two years.

4 For LLRTs of isolation valves, analysis shows  
5 about 90 to 95 percent of the valves have never failed a  
6 test. The type C tests detect about 85 percent of the  
7 leaks, most of the leaks. For the valves that do fail,  
8 there's an increased probability that they will fail again  
9 in the next two outages. That is the failures are  
10 dependent. However, we didn't find any correlation between  
11 the valve failures and system valve type parameters. These  
12 findings were true both for North Anna and Grand Gulf and  
13 the summary of data we received from NEI for 31 units  
14 indicated similarities to the data from these two plants.

15 This analysis confirmed the feasibility of  
16 performance-based testing schemes proposed by industry.  
17 That is, good performance can be established when a  
18 component has passed two previous consecutive tests. The  
19 staff proposes to approve extending the interval of type C  
20 tests to five years based on performance and safety  
21 significance. This also should result in a marginal impact  
22 on safety.

23 It is important to note that the type of analysis  
24 we've conducted here and the testing schemes adopted are  
25 new. Although the staff encourages these innovative

1 proposals and has concluded that they are feasible, we'd  
2 like to proceed with some caution. I'll come back to this  
3 point later.

4 Slide 7, please.

5 [Slide]

6 DR. DEY: Slide 7 summarizes our risk impact  
7 assessment and also industry burden reduction. First let me  
8 cover our risk studies summarized in the first two bullets.  
9 Our present effort essentially extended previous  
10 staff efforts in 1984 and again in 1986 to assess the risk  
11 significance of containment leakage. Our analyses are  
12 presented in the NUREG report in the SECY paper.

13 Using the latest PRA studies and NUREG-1150, we  
14 confirmed earlier conclusions that overall population risks  
15 are not sensitive to containment leakage rates at the low  
16 levels. Leakage can be increased by two orders of magnitude  
17 with only a marginal impact on population risk estimates.  
18 The risk is dominated by low probability high consequence  
19 scenarios where the containment is failed or bypassed.  
20 Little benefit is derived from a high degree of containment  
21 leak tightness.

22 I'd like to spend a couple of minutes on some of  
23 the results. Using NUREG-1150, we found the sensitivity of  
24 individual cancer risk to containment leakage is essentially  
25 flat up to about 10 to 50 percent, volume percent per day

1 ' leakage rates. Current allowable leakage rates are at .1 to  
2 .5 percent per day range. We conclude the main reason for  
3 this sensitivity is the fission product decay or retention  
4 versus leakage rate. The source term varies linearly with a  
5 very small slope with leakage rate until the leakage affects  
6 the source term development and the fission product  
7 retention. The curves for BWRs rise at larger leakage rates  
8 because of the higher probability of containment failure in  
9 BWRs. Also, there's more fission product scrubbing in the  
10 pools for BWRs, which will have a similar effect. The  
11 presence of engineered safety features plays a role in this  
12 sensitivity by affecting the retention of fission products.

13           This information we used to assess the risk  
14 impacts of the alternative test frequencies. Given the very  
15 good performance history of the tests and the low leakage  
16 rate detected in the failed test, the risk impact on  
17 extending test intervals is marginal. For the IRLTs, we  
18 estimated that the interval extension to ten years will  
19 result in less than one percent increase in risk. For the  
20 LLRTs, we estimate that the performance-based testing  
21 schemes will result in a few percent increase in overall  
22 risk.

23           Although qualitatively we've discussed in the  
24 draft NUREG, we have not as yet included an estimate of the  
25 decrease in risk from less testing due to shutdown risk and

1 post-test restoration errors. As suggested by the ACRS, we  
2 intend to quantify the decrease due to shutdown risk. Also  
3 as indicated by the ACRS, this decrease may actually negate  
4 the estimated marginal increase in risk.

5 Now let me turn to --

6 COMMISSIONER ROGERS: Excuse me. Before you move  
7 off that.

8 DR. DEY: Yes.

9 COMMISSIONER ROGERS: Those calculations of the  
10 increase in risk or the risk as a result of these leakages,  
11 how do you do those? Do you assume that the leakage rate is  
12 unaffected by the existence of an accident? I mean, for  
13 example, if there is a severe accident in a containment with  
14 a low leakage rate, is it possible that that leakage rate  
15 would not be the one that would actually control in the  
16 event of an accident, that that rate may be increased by  
17 some damage to the area where the leak is occurring? So,  
18 when you do your calculation, if you just simply assume that  
19 you've got a severe accident or something inside the  
20 containment and then the leakage rate is fixed, and then you  
21 calculate what the increased risk is as a result of that, is  
22 that the only possibility? Isn't there another possibility  
23 that the rate itself may be affected by the existence of an  
24 accident?

25 CHAIRMAN SELIN: In which case the test would be

1 even less useful.

2 MR. MURPHY: When we did NUREG-1150, we were very  
3 conscious of that. So, the assumption in NUREG-1150 was  
4 that the containment leaked at one percent per day rather  
5 than at ten percent. It's because of the additional  
6 stresses that would come from the severe accident that was  
7 beyond design basis essentially. What we did in this study  
8 was essentially to start with that one percent per day  
9 number from NUREG-1150 and then vary it down to zero and  
10 vary it up as high to the point where we could see the bend  
11 in the curve which is on the order of start bending around  
12 50 percent. I think the highest we went was about 200  
13 percent. At some point you would expect it to essentially  
14 start to turn over because the higher leakage rate prevents  
15 the ultimate failure of the containment from over pressure  
16 failure. So, it's a complex relationship, but at least in  
17 that range from zero to 200 percent we have a reasonably  
18 good feel as to how it would behave. But your concern is  
19 certainly a valid one.

20 MR. RUSSELL: Generally we've used correlations  
21 that are related to pressure to leak rate. We have in cases  
22 where the pressure is reduced essentially assumed that the  
23 leakage stops. So, that's another factor that needs to be  
24 built into the parameters, but we have assumed a constant  
25 and generally have modeled based upon what containment

1 pressure would be as the forcing function such that if you  
2 are able to get the pressure back down it's less of a  
3 concern. This is one of the big differences between what  
4 we're looking at now with the passive designs and the  
5 evolutionary designs where you have system sprays, et  
6 cetera, things to intentionally drive pressure down.  
7 Pressure will be staying up in containment for a much longer  
8 period of time because that's, in fact, the heat sink that  
9 you're using. We are exploring those issues as well as a  
10 part of the advanced design reviews.

11 DR. SPEIS: Let me add something also to this. I  
12 think the main reason why the curve is flat of risk versus  
13 leakage is that for those accidents, severe accidents where  
14 the containment remains intact but leaks, is that there is  
15 an assumption based on PRA arguments that some of the  
16 engineering safety features work. Therefore, the non-noble  
17 gases are retained in the containment and the only thing  
18 that leaks out is the noble gases. So, this area has to be  
19 looked very carefully to make sure that you understand the  
20 sequences. For example, there are some sequences where the  
21 engineering safety features will retain their integrity, but  
22 others, like for example station blackout, you don't have  
23 sprays. So, that area has to be looked very carefully. But  
24 I think we're confident, at least up to a factor of ten.  
25 Beyond that, we have to explore all the PRA arguments to

1 make sure that we're on very sound ground.

2 CHAIRMAN SELIN: These calculations remind me of  
3 my days in the Defense Department when we compared weapon  
4 systems that have one percent difference in case of nuclear  
5 war. We just want to know if we're in the right ballpark.

6 DR. SPEIS: Yes, that's exactly right.

7 CHAIRMAN SELIN: Basically you've said there are  
8 very few leaks, we can't detect them anyway and even if we  
9 could they wouldn't make any difference. So, why are you so  
10 cautious? If we didn't do leak testing today and you came  
11 to us with this program and say, "We want to do this leak  
12 testing based on this program," we'd throw you out. I  
13 really don't understand this. At the very least, I want to  
14 make sure that the language you put in this statement is  
15 broad enough so that if we decide to make this mandatory or  
16 even less, you don't have to go out with another draft rule.  
17 The whole argument seems to be based on we can do a little  
18 bit, whereas in fact I think your argument supports doing a  
19 lot more than you're proposing to do. .

20 I apologize slightly for the weak attempt at  
21 humor, but I really don't understand why you're so cautious  
22 on the conclusions that you draw. By our standards, by NRC  
23 standards, this is definitive analysis. Remember some of  
24 the stuff you've come to us with at different times, and yet  
25 you're so cautious in the conclusions.

1 DR. SPEIS: Well, in this proposed rule, we're not  
2 using leakage on an absolute sense as a performance  
3 criterion. We're talking about leak rate testing intervals.  
4 Okay? But the phase 2 will address that issue and coupled  
5 to that our licensing basis, Part 100 calculations. We're  
6 really ahead of the game, but we agree with you.

7 CHAIRMAN SELIN: Phase 2 is a different part.  
8 Then you're really getting into better understanding of the  
9 physics and the dynamics. Here you have a fairly limited  
10 question. You've got, as I said, an overwhelming analysis  
11 and very cautious conclusions. At the very least, allow us  
12 some flexibility so that if we decide to draw more far  
13 reaching conclusions we don't have to go out with another  
14 draft rule.

15 COMMISSIONER de PLANQUE: Is it obvious to you  
16 that phase 2 and this one are indeed separable so that it  
17 makes sense to go out with this now?

18 DR. SPEIS: Yes.

19 MR. RUSSELL: The issues that you would need to  
20 address in reassessing what is the appropriate leak rate to  
21 use are much more complex and gets to a broader evaluation  
22 of the containment performance function. For granting  
23 relief, I think that we would have to understand better the  
24 sequences, source term, source term transport, how it's  
25 playing out, the timing issues and we're seeing some of that



1 now.

2 DR. THADANI: It will impact some of the licensing  
3 basis and some of the other regulations then clearly that  
4 have to be addressed. For example, Part 100.

5 MR. RUSSELL: Well, we've proposed changes to put  
6 that back into Part 50. Basically the surrogate that we've  
7 used is a dose calculation for a two hour dose. We've  
8 proposed some changes to you to put that all in Part 50.  
9 But this would have potentially significant implications for  
10 the regulatory process that we've used in the past.

11 DR. DEY: Okay. Let me turn to the reduction in  
12 burden estimates this rule revision would provide to  
13 industry. The flexibility -- that's in the third and fourth  
14 bullet of slide 7.

15 The flexibility provided by the proposed rule is  
16 expected to provide an economic incentive for good  
17 performance and also significantly reduce industry burden.  
18 Extending the IRLT intervals to one and ten years based on  
19 good performance is expected to decrease total industry  
20 costs by \$330 to \$660 million. The lower range assumes  
21 results from assuming an average life of 20 years remaining  
22 for the 110 reactors. The upper range is assuming an  
23 average 20 year life extension for all reactors. The total  
24 occupational exposure is estimated to be reduced by up to  
25 400 person rem.

1           The performance-based testing schemes for the  
2   LLRTs are expected to reduce total industry costs from \$30  
3   to \$55 million. The total occupational exposure will be  
4   significantly reduced by up to 2,800 person rem.

5           We estimated that an IRLT costs about \$1.8  
6   million. About \$1.5 million of this is from replacement  
7   power costs because IRLTs require about five days during an  
8   outage when no other work can be done. Cost for each plant  
9   will vary because of differences in replacement power costs.  
10   Occupational exposure is estimated at about .4 person rem  
11   for an ILRT. An average battery of LLRTs for a PWR is  
12   estimated to cost about \$165,000.00. Grand Gulf, a BWR, has  
13   indicated their cost for LLRTs is about half a million  
14   dollars. BWRs typically have a larger number of  
15   penetrations.

16           The performance-based testing schemes for LLRTs  
17   are estimated to reduce the number of tests by about 50  
18   percent. The occupational exposure from a battery of LLRTs  
19   is estimated at 2.4 person rem.

20           Can I have slide 7, please? Slide 8.

21           [Slide]

22           DR. DEY: Slide 8 describes the key aspects about  
23   the reg. guide and the NEI guideline. The reg. guide  
24   endorses the guideline, subject to two exceptions. Before I  
25   describe the exceptions, I would like to first describe

1 briefly the NEI guideline.

2 The guideline establishes the performance factors  
3 for extending the test intervals. IRLT test interval may be  
4 extended to one in ten years if two consecutive tests meet  
5 the allowable leakage rate. For LLRTs, test intervals may  
6 be extended to five years based on two successful tests and  
7 up to ten years based on three previous successful tests.  
8 Performance is based on as-found tests. Safety impacts,  
9 service, design will also be considered before extending  
10 intervals. For extension to ten years, the tests should be  
11 staggered to detect for common mode failure mechanisms and  
12 the entire process should be reviewed. The guideline  
13 emphasizes performance assessment and corrective action when  
14 failures are detected. It also endorses an ANSI standard  
15 for test methods.

16 CHAIRMAN SELIN: Let me ask you a not completely  
17 hypothetical question. What if for the IRLTs we just said,  
18 "We're just not going to do them." I mean not based on  
19 performance, we just said we're not going to do them. Do  
20 them one every ten years or do them at license renewal.  
21 What would that do to the risk? You know, I'm a little  
22 concerned that you've gotten on a sort of performance kick  
23 just because we want to do performance-based, but maybe we  
24 can just cut out some of these tests regardless of their  
25 performance, particularly the ILRTs. The risk much be

1 comparable to the storage tanks that we look at every 40  
2 years and a couple of other questions, aren't they?

3 DR. DEY: One limitation we had in the process of  
4 reviewing that question was the risk analyses given the data  
5 shows that you could go beyond ten years, up to 20 years, a  
6 very marginal risk impact. But there's some uncertainties  
7 related particularly to degradation and aging of the  
8 structures. Currently, most pressure vessels are tested at  
9 that range, ten year range. So, we concluded that we'd like  
10 to keep it at this time limited to ten years until we gain  
11 more experience. As a note, the Europeans also settled on  
12 that frequency.

13 CHAIRMAN SELIN: Explain to me again which ranges  
14 are based on performance and which are just reductions in  
15 frequency regardless of performance?

16 DR. DEY: I was going to get into this a little  
17 more later. We used the risk analysis to justify extension  
18 of the intervals, but we've used deterministic -- the risk  
19 analysis using historical databases in the analysis. But we  
20 used deterministic engineering judgment to limit the  
21 intervals for the type A and also I was going to get into  
22 the type C tests. We took exception to industry's proposal  
23 going to ten years on those.

24 CHAIRMAN SELIN: The type A tests, you're not  
25 taking a look at the individual licensee's performance to

1 decide whether to increase the interval, you would just  
2 increase the interval, is that correct?

3 DR. DEY: No. It's based on two previous  
4 successful tests at the plant.

5 CHAIRMAN SELIN: Two previous successful what  
6 tests?

7 DR. DEY: IRLT tests.

8 COMMISSIONER de PLANQUE: But if the likelihood of  
9 a leak increases with the age of the thing, why is previous  
10 success a determining factor? Why does previous performance  
11 indicate it's okay?

12 CHAIRMAN SELIN: Let me just carry on with  
13 Commissioner de Planque's. Your chances of having a leak  
14 are very low, based on history. You're sort of independent  
15 almost. Chances of having found it are very low. Why not  
16 just make it one in ten years or some period that depends on  
17 age, not on previous performance? I really would like to  
18 see the false alarm and false -- if you're going to stick to  
19 this approach, I would like to see some of these conditional  
20 probabilities. I think it's a much higher chance that you  
21 will miss the leak when you do the test than you will find  
22 it and therefore you can't change the interval. You have  
23 very low probability of finding something and yet you're  
24 conditioning future performance based on finding something.  
25 From a Bayesian point of view, that just doesn't make any

1 sense.

2 DR. DEY: I think you're right.

3 CHAIRMAN SELIN: Now, the LLRTs, that's a little  
4 different. Your probabilities are a little higher, both of  
5 having a risk and of finding them. But I really wonder  
6 whether you haven't been too obedient to our guidance. We  
7 don't want you to do performance based if based on absolute  
8 criteria you can end up with better results.

9 DR. SPEIS: Let me try again. What we're  
10 proposing today is not really performance-based. Okay?  
11 It's based on -- well, that's not quite true.

12 CHAIRMAN SELIN: I guess you fooled me because you  
13 said performance-based.

14 DR. SPEIS: It's based on past performance.

15 CHAIRMAN SELIN: You mean on historical  
16 information, not on the performance of a particular example?

17 DR. SPEIS: That's right. But at the same time we  
18 looked at the model, a risk model, and we put the numbers  
19 that we derived from historical experience and we were okay.  
20 Then we did some extensions. We went to 20 years and --

21 CHAIRMAN SELIN: Let me come back to the basic  
22 question. Which tests depend on the previous history of  
23 that universe, of that -- you know, previous examples of  
24 that test on that containment?

25 DR. DEY: It's basically the LLRTs.

1           CHAIRMAN SELIN: The ILRTs are just -- you know,  
2 we're just changing the features regardless of what we found  
3 at that reactor in the past. Is that right or is that not  
4 right?

5           MR. MURPHY: Well, what we have tried to do on the  
6 IRLTs is recognize that -- we haven't found many leaks in  
7 IRLTs.

8           CHAIRMAN SELIN: Right.

9           MR. MURPHY: But we also don't have a lot of data  
10 with a lot of years, with a lot of aged plants. So, one of  
11 the reasons for setting the limit to ten years as opposed to  
12 extending it further is to recognize that the undetected  
13 time could increase so much over that period.

14          CHAIRMAN SELIN: Why don't you do a sample then?  
15 I mean why do you have -- I'm sorry. I'm getting too far  
16 into detail, but I really do believe that if we applied a  
17 neutral test, a Bayesian test, let's just say is there a  
18 risk justification for what you're doing, it's too far. If  
19 we don't understand the phenomenon, you don't have to test  
20 every reactor. Why don't you do a sample and see what  
21 happens with age?

22          I don't want to change what you go out with, but I  
23 do want the possibility of considering a less restrictive  
24 testing regime. I want to make sure that the document that  
25 goes out for comment doesn't undercut us if we decide to cut

1 back even further on the testing.

2 DR. DEY: Okay.

3 DR. SPEIS: Also, one of the reasons -- this is  
4 the only test that tests the capability of the containment  
5 from a structural standpoint.

6 MR. RUSSELL: There are several different types of  
7 containments. The pressure at accident pressure with doing  
8 visual inspections can become valuable. We've said that the  
9 visual inspections are valuable for degradation, but there  
10 has been crack mapping and other things which have been done  
11 on containments. I'm thinking now about some of the  
12 prestressed or containments with tendons, et cetera. So, we  
13 at this point aren't ready to --

14 CHAIRMAN SELIN: I don't have a problem with the  
15 visual testing part.

16 MR. RUSSELL: But the visual testing with pressure  
17 provides you information on the structural situation which  
18 you would not have by just a visual without being under  
19 pressure. The proposal would go to ten years instead of  
20 doing this three times in ten years. We did not develop at  
21 this point a detailed rationale that would look at going  
22 beyond ten years and the structural implications of that,  
23 detection of degradation or the risk side. If that's what  
24 the Commission wishes, we can certainly go back and look at  
25 that, but I'd like to give a more reasoned answer than a



1 short answer at the table.

2 DR. DEY: Let me cover the two exceptions in the  
3 reg. guide the staff has taken. One is to continue the IRLT  
4 and the visual inspections, the visual inspections of the  
5 current frequency because we don't think they are very  
6 burdensome and maintaining the frequency will allow early  
7 detection of degradation. We've been talking about this,  
8 that the staff has used PRA and risk insights to assess the  
9 impact of extending these intervals. However, we haven't  
10 set the exact intervals based on a risk calculation and  
11 algorithm. This is because mainly of limitations in data,  
12 particularly for the LLRTs. We've used deterministic  
13 engineering judgment to complement the risk analysis.

14 This performance-based technology is new for the  
15 industry and exact quantification of leakage levels in the  
16 tests and the nature of common or repetitive failures are  
17 limited at this stage. Also, based on historical data,  
18 we've proposed to emphasize the LLRT program. Therefore,  
19 the staff has taken exception to NEI's proposal for  
20 extending the test intervals or isolation valves, the type C  
21 tests, up to ten years and limited the extensions to five  
22 years.

23 The staff proposes to adopt these approaches with  
24 some caution. As data is gathered on extended intervals,  
25 the uncertainties can be decreased and the staff is

1 committed to reevaluate its position at that time and revise  
2 the reg. guide.

3 Can I have slide 9, please?

4 [Slide]

5 DR. DEY: We've talked a little bit about this.  
6 Slide 9 presents the summary of the staff's proposal for  
7 future performance-based oriented rule in phase 2. In this  
8 phase we propose to address all aspects of containment  
9 integrity. In SECY-92-263, the staff had proposed to relax  
10 the allowable leakage rate along with the revision of  
11 Appendix J. But later in SECY-93-028 and more recently in  
12 SECY-94-090, we propose a separate action and we've  
13 discussed this briefly. This is because revising the  
14 allowable leakage rate on a risk basis would impact  
15 licensing basis and other regulations. This would involve  
16 more careful consideration. So, we decided to separate the  
17 two actions. Control room habitability will also need to be  
18 considered in revising the allowable leakage rate.

19 In the statement of considerations we have, as Joe  
20 mentioned, inserted a couple of questions to guide this  
21 future rulemaking. We plan to develop the details in the  
22 schedule after our analysis of the public comments.

23 If I could have slide 10, please.

24 [Slide]

25 DR. DEY: Slide 10 shows the schedule for the

1 final rule. Based on Commission approval, we expect to  
2 publish the rule by the end of this year. Public comment  
3 period will take us until about mid-March 1995. We'll  
4 prepare a final rule based on our review of public comments  
5 and plan to submit a final rule package to the ACRS in May  
6 and initiate parallel review with ACRS and CRGR, and aim to  
7 send the Commission the final rule in June of 1995 and brief  
8 you in July. This is really the best possible schedule.  
9 We're trying to be responsive to industry that has indicated  
10 a desire for the rule. However, we will only proceed after  
11 a thorough analysis of public comments. Also, industry will  
12 need to provide timely revisions of that guideline in  
13 response to the staff's position and guidance based on  
14 public comments. Thus far, the staff has had productive  
15 interactions with industry in this rulemaking.

16 That completes my presentation. Unless there are  
17 questions at this point, Rich Lobel, NRR, will brief you on  
18 the implementation of the rule.

19 CHAIRMAN SELIN: Thank you very much, Dr.

20 MR. LOBEL: Thank you.

21 My name is Richard Lobel. I'm a senior reactor  
22 engineer in the Containment Systems and Severe Accident  
23 Branch in NRR, and I'd like to talk about the implementation  
24 of the proposed rule.

25 Next slide, please.

1 [Slide]

2 MR. LOBEL: The character of the new rule will  
3 require some changes in implementation from the current  
4 rule. Presently the rule is very prescriptive and  
5 schedules, test methods, acceptance criteria are all spelled  
6 out in the rule itself.

7 The guidance for implementing the new rule will be  
8 contained in other documents, a regulatory guide which will  
9 in turn endorse the NEI guidance document, the industry  
10 document that Dr. Dey was talking about, and also an ANSI  
11 ANS standard. Under the new rule, licensees will determine  
12 the test intervals based on the performance of each  
13 component. Each component will be monitored separately.  
14 Licensees will therefore have more latitude for implementing  
15 the rule and more incentive to strive for good performance  
16 since a good performing component doesn't need to be tested  
17 as often.

18 The staff intends to require that the regulatory  
19 guide which contains the implementation guidance be  
20 contained in the plant technical specifications. This is an  
21 important point and I'd like to discuss it more shortly.

22 Reporting and recordkeeping requirements have been  
23 changed. Based on the experience that we've obtained with  
24 the present rule, the staff has reassessed what information  
25 we think we need from licensees and what information can be

1 retained by the licensee.

2 Because licensees will have more latitude in  
3 implementing the new rule, the inspection procedures will be  
4 a little different.

5 And finally, the new rule should result in many  
6 fewer exemptions being required by licensees since the new  
7 rule is so much less prescriptive.

8 An important issue that arose during the  
9 rulemaking that I'd like to discuss is type A exemptions.  
10 Some licensees have type A tests -- these are the overall  
11 containment tests -- scheduled for their facilities during  
12 the time of this rulemaking. These licensees are requesting  
13 a postponement by exemption until after the rulemaking is  
14 completed. The staff considers it inappropriate to grant  
15 exemptions to items being addressed in a rulemaking. We are  
16 granting other exemptions, both type A exemptions and type B  
17 and C exemptions to Appendix J. We're doing this on a  
18 routine basis as justified and I'll talk about that more  
19 later.

20 MS. CYR: I think the Commission has to be  
21 prepared to look at exemptions. I mean, you can prioritize  
22 the basis under which you accept exemptions, getting  
23 priority to completing the rule, but basically we have a  
24 provision in our regulations under 50.12 which provides that  
25 we will consider exemptions so that we have to in a sense

/

1 accept the exemption requests, look at them, consider them.  
2 But, I mean, we can certainly -- the staff can put its  
3 priorities where they need to do in terms of getting the  
4 rule done.

5 CHAIRMAN SELIN: Actually, I'd like to follow-up.  
6 We only have one rule at a time, and so while we  
7 have a current rule we have to follow that rule. So a basis  
8 for an exemption can't be that we have a new rule coming  
9 around the corner.

10 On the other hand, you can't stop looking at  
11 exemptions because we're going to change it. It's just the  
12 licensees have to be smart enough to say, "We've done the  
13 risk analysis and this test is unnecessary," rather than  
14 "You've done the risk analysis and because you're going to  
15 change it we don't want to --

16 DR. THADANI: There are specific criteria that  
17 Karen is in fact talking about under 50.12 which do give  
18 that option to the utilities to follow.

19 CHAIRMAN SELIN: That's a generic thing. We have  
20 a set of rules and until we have a new set of rules we have  
21 to follow those, which includes not only the restrictive  
22 part of it that you have to do these things but also the  
23 exemption part of it which says that here are the procedures  
24 for getting exemptions.

25 MS. CYR: That's correct.

1 MR. RUSSELL: The point we're trying to make is  
2 that they would have to justify it technically --

3 CHAIRMAN SELIN: On the current rule.

4 MR. RUSSELL: -- on the current rule and not  
5 simply say that because there's a proposed rule and here's  
6 the technical basis in the proposed rule and cite that  
7 proposal as a basis for saying grant me an exemption.

8 COMMISSIONER de PLANQUE: So in theory the  
9 exemptions are possible. They just have to state it in the  
10 right way.

11 MR. RUSSELL: They would have to bear the burden  
12 of showing why this is appropriate to do under the criteria  
13 that's currently in 50.12.

14 COMMISSIONER de PLANQUE: Is that a real  
15 possibility?

16 MR. RUSSELL: We've said that we would look at  
17 those. There would be -- basically an individual licensee  
18 would be carrying the same burden that we're carrying in the  
19 rulemaking activity.

20 MR. LOBEL: And we have been looking at those and  
21 we have been giving exemptions from type A tests where it's  
22 been justified on a basis other than that a new rule is  
23 coming.

24 Next slide, please.

25 [Slide]

1           MR. LOBEL: A licensee electing to use the new  
2 rule will have to revise their existing technical  
3 specifications to eliminate those specifications that are  
4 applicable to the existing rule. These specifications are  
5 typically fairly simple, usually a general statement at  
6 least in the improved tech specs that the leakage rate  
7 testing will be done in accordance with Appendix J and  
8 approved exemptions. Since the detailed requirements are in  
9 the rule, this is sufficient for the technical  
10 specifications.

11           The new rule requires the regulatory guide or an  
12 equivalent licensee document be incorporated by reference in  
13 the plant technical specifications. Since the details of  
14 the implementation requirements have been removed from the  
15 regulation, the staff considers it to be necessary that  
16 there be some regulatory control maintained and that this is  
17 best done with the technical specifications.

18           NEI, representing the industry, is opposed to  
19 incorporating the implementation guidance in the technical  
20 specifications. NEI would prefer to use 50.59 to revise the  
21 updated safety analysis report to document the containment  
22 leakage rate program. This gives the licensee the decision  
23 power as to whether a change is an unreviewed safety  
24 question that requires NRC review, and ACRS has agreed with  
25 the NEI position.



1           MR. RUSSELL: I would point out that the  
2 Commission's policy on the content of technical  
3 specifications, by following that policy activities  
4 associated with the containment are appropriate to include  
5 in the technical specifications.

6           CHAIRMAN SELIN: But isn't there a third position  
7 possible, which is that, yes, it is a tech spec but we have  
8 come up with some kind of a broad statement that says this  
9 section of tech specs are not relevant and this section can  
10 be --

11          MR. RUSSELL: If you look in the package, it's a  
12 very simple technical specification that just says that "The  
13 frequency will be done in accordance with..." and it  
14 references the reg guide, and if they follow the reg guide  
15 that's fine. Or if they propose to do something different  
16 from the reg guide, then we would cite whatever the licensee  
17 document is that's proposed.

18          CHAIRMAN SELIN: But can you preapprove that  
19 change? I mean, do we have to -- let's say they make the  
20 change you just cited, Mr. Russell. Do we have to then  
21 process each of these tech specs one at a time to say it's  
22 approved as a license amendment?

23          MR. RUSSELL: Yes.

24          CHAIRMAN SELIN: Is there a way to do that and  
25 block -- you know, can we just have a flat statement that

1 says anybody who incorporates this exact language would  
2 automatically have a change approved or something like that?

3 MR. RUSSELL: There would be an amendment to the  
4 technical specifications to change from the current  
5 technical specifications to the revised specification which  
6 references the regulatory guide. We could have a generic  
7 evaluation that would not require substantive work, but  
8 you're still making physical changes --

9 CHAIRMAN SELIN: I see, but --

10 MR. LOBEL: But, essentially --

11 CHAIRMAN SELIN: Please, Mr. Lobel.

12 MR. LOBEL: Essentially, that's what we'd be doing  
13 and that's what we have been doing by doing the review of  
14 the NEI guidance document. The acceptance into a specific  
15 plant's technical specification would have to be on a plant  
16 specific basis, but we have essentially done or are in the  
17 process of doing the technical review. It's similar to line  
18 item improvements and I guess I don't know of any way --

19 MS. CYR: The only way you could do it would be by  
20 rule or license amendment.

21 CHAIRMAN SELIN: We're doing a rule, so why can't  
22 we --

23 MR. RUSSELL: Then we would have to incorporate  
24 the regulatory guide into the rule to have the finality, and  
25 we wanted to have the ability, if there are changes to the

1 regulatory guide, to not have to go back to rulemaking to  
2 revise that.

3 CHAIRMAN SELIN: I don't think that's right. Why  
4 can't we put a line in the rule that says, "If you follow  
5 the currently approved regulatory guide..." and you put in  
6 this exact language citing the regulatory guide, "your  
7 change is approved."

8 MR. LOBEL: Well, let me say --

9 MR. RUSSELL: That's one that the General Counsel  
10 needs to answer.

11 MS. CYR: You could do that. I mean, you could  
12 figure out a way to take the rule which essentially amends  
13 all licenses --

14 CHAIRMAN SELIN: I mean, basically what I'm  
15 suggesting is that --

16 MR. RUSSELL: We do that even with the ASME code.  
17 We approve a particular version, we incorporate it. As  
18 there are subsequent changes to that, you're still into a  
19 rulemaking to approve the subsequent change.

20 CHAIRMAN SELIN: Well, you really ought to think  
21 twice about that, because otherwise you're in a position  
22 that every time the reg guide changes everybody who's  
23 followed this has to come back and get a license amendment  
24 to change a tech spec.

25 I don't want to go too far. What I'm saying is I

1 think it's possible to give you your main point, which is  
2 that these are not unreviewed changes, you know, anything to  
3 do with containment, without having to go to the extreme  
4 case of having to approve case by case what are a bunch of  
5 trivial license amendments. It's worth taking a look to see  
6 if you can come up with a procedure. You can keep your  
7 principle but still simplify the execution, perhaps.

8 MR. RUSSELL: We were also trying very hard to not  
9 have the very explicit detail in a rule. That was the whole  
10 reason for moving it out of the rule into a regulatory  
11 guide.

12 CHAIRMAN SELIN: The reg guide is still referenced  
13 and if the reg guide changes the reference changes. And the  
14 second is that doesn't have to be the only way that you  
15 change your tech specs. In other words, if you do it this  
16 way, it's approved. If for some reason you want to do it  
17 another way, you file a license amendment. You don't have  
18 to be prescriptive. You can just say here's an option  
19 that's approved en block and then other options we'll do the  
20 way we would do them anyway.

21 What I'm saying is I really want to make life  
22 simple if in fact the safety issue is simple. Maybe you can  
23 figure it out. Maybe you can't.

24 MR. RUSSELL: We'll dialogue with General  
25 Counsel's office and see if there's a way that we can do

1       that.

2               CHAIRMAN SELIN:  It may be a bad idea.  I'll grant  
3       that.

4               DR. SPEIS:  I think the specific issues we're  
5       talking about are how does a plant develop a new algorithm  
6       based on the new information, so we're going to have to  
7       provide some general guidance in the reg guide, how you  
8       develop algorithms up or down, and then -- but that's what  
9       we're talking about.  That's one of the issues that we might  
10      want to review on a plant specific basis.

11              MR. RUSSELL:  But the issue that is at point  
12      between NEI and the staff or the industry and the staff is  
13      that they want to be able to make changes to testing methods  
14      without prior review pursuant to 50.59 and the staff feels  
15      that that's not appropriate.

16              CHAIRMAN SELIN:  I don't -- I agree with the  
17      staff.

18              MR. RUSSELL:  So we want to control either by  
19      amendment or rulemaking.

20              CHAIRMAN SELIN:  I agree with the staff.  Okay?  
21      But it doesn't follow that you have to then do it by  
22      amendment.

23              Let me make this clear.  It's not that I'm trying  
24      to save one-tenth of a man day per rule.  It's that you're  
25      reluctant to make this a mandatory change because the

1 process for getting these approved is hard. So, if it's not  
2 so hard, maybe you would be willing to make it mandatory. I  
3 see all the man rem saving that we can get and therefore I'm  
4 very interested in reducing the bureaucratic barrier so that  
5 you would feel comfortable making these mandatory as opposed  
6 to optional and getting those savings and exposing  
7 individuals to tests. If simplifying the paperwork will do  
8 that, then that has a safety significance, not just a  
9 resource significance.

10 COMMISSIONER de PLANQUE: If you were to go the  
11 route of making this mandatory, would there be any problem  
12 with the backfit rule?

13 MR. RUSSELL: The note I passed to you earlier, if  
14 we were to --

15 COMMISSIONER de PLANQUE: On backfit?

16 MR. RUSSELL: Yes. If we were to make this  
17 mandatory, would we be able to carry the burden under the  
18 backfit rule of showing that this would provide substantial  
19 additional protection given the level of personnel exposure  
20 that we're looking at on a per unit basis.

21 MS. CYR: This is a question that the Commission  
22 has struggled with in the past on this basis and we can look  
23 at it again, but I think the -- we've had some trouble in  
24 the past giving our current test. That's not to say that  
25 the Commission couldn't make a judgment, but the staff has

1 had trouble developing guidance in the past recognizing  
2 there is an occupational overall savings here, but in terms  
3 of looking at the way we've traditionally done our balancing  
4 and calculations of the backfit test, I think.

5 CHAIRMAN SELIN: We took the position that if  
6 there is no cost, you don't have to prove a positive health  
7 benefit to change the rule under backfit.

8 MS. CYR: I don't think so.

9 CHAIRMAN SELIN: Oh, I took that position.

10 COMMISSIONER de PLANQUE: Let me theoretically  
11 carry that one step further. If we didn't currently have  
12 Appendix J and you were proposing it as a new rule, would it  
13 be justifiable under backfit?

14 DR. DEY: Yes. I think if there wasn't a rule, I  
15 think the testing for some of the isolation valves which can  
16 be fairly safety significant would increase safety.

17 MR. RUSSELL: That's a very hard question to ask  
18 given the history that we've had with testing and the  
19 containment performance. So, I'm not sure that we can  
20 really answer that in the abstract.

21 COMMISSIONER de PLANQUE: I realize that

22 MR. TAYLOR: If that didn't exist, I think we'd  
23 have the basis of backfitting, containment protection  
24 purposes.

25 DR. SPEIS: We had an earlier proposal and we had

1 a hard time showing --

2 COMMISSIONER de PLANQUE: I know.

3 DR. SPEIS: -- an overwhelming safety benefit.

4 That's why we're --

5 COMMISSIONER de PLANQUE: That's why this is

6 optional.

7 DR. SPEIS: That's why we're here today basically.

8 COMMISSIONER de PLANQUE: Yes.

9 MR. RUSSELL: Let me also point out that while we  
10 talked about the leakage aspects of containment, containment  
11 failure which would result in gross leakage as compared to  
12 the assumptions that were made, which is really the  
13 structural integrity, and the vehicles that we use to assess  
14 capability of passive components to perform and all the  
15 issues we have with the license renewal rule as it relates  
16 to passive components, we currently have not even endorsed  
17 the ASME code standards for in-service inspection of  
18 containments. That's another issue that we're working on.  
19 So, the in-service inspection aspects, all of this is tied  
20 together. So, I would propose in coming back to the  
21 question that the Chairman raised on whether we could  
22 eliminate the integrated leak rate test totally be looked at  
23 in the context of the phase 2 program because I think this  
24 involves both leak rate and structural performance for  
25 different types of containments. It is not the kind of



1 question that we can respond to in a relatively short period  
2 of time.

3 MR. TAYLOR: And there are enough differences in  
4 individual containments even of the same type that we have  
5 to look at differences in individual containments, even for  
6 the same type of containment.

7 MR. LOBEL: I think it may help to answer the  
8 question a little bit to look at -- to understand the way we  
9 look at Appendix J. Dr. Dey talked about LA before which is  
10 in the technical specifications and is the leak rate that  
11 the licensee has to stay below to meet the criteria of his  
12 accident analysis. Really, Appendix J is the surveillance  
13 requirement for that number. So, to say that you had  
14 Appendix J -- to say that you had LA but didn't have  
15 anything that was equivalent to LA, that probably wouldn't  
16 be the case. There would probably be some kind of  
17 surveillance to assure that plants were meeting the LA  
18 value, which gets into my next slide.

19 Can I have the next slide, please?

20 [Slide]

21 MR. LOBEL: I was going to try to explain a little  
22 bit about why the staff felt that we needed a technical  
23 specification for the regulatory guide and really the point  
24 is the one that I was just discussion, that LA is specified  
25 in the technical specifications and Appendix J is the

1 surveillance requirement. It's the staff's requirement to  
2 make sure that the LA value is being maintained or less than  
3 LA and therefore we feel it's important enough to have prior  
4 review and approval. Rather than have all the details in  
5 the rule, we've decided to put them in a regulatory guide,  
6 but we still feel that there should be some regulatory  
7 control.

8 As I think was also mentioned before, LA meets the  
9 Commission's criteria for inclusion in the technical  
10 specifications and again Appendix J is the surveillance  
11 requirement for LA. It's usual to have a surveillance  
12 requirement in the technical specifications.

13 The staff plans to issue a generic letter after  
14 issuance of the new rule that will provide some sample  
15 technical specifications. In the package, the SECY-94-283  
16 that you have, are some samples of technical specifications.  
17 They're really pretty simple. The main items of importance  
18 that we're concerned about are the algorithm for determining  
19 the test intervals. If a licensee feels that there's a good  
20 technical justification for changing those, we would like to  
21 have prior review and approval before they're implemented.  
22 The testing methods themselves, if a licensee wants to  
23 change those, we would like to be aware before the change is  
24 made. Also there are certain isolation valves that the  
25 staff considers so important that we specified these in the

1 technical specifications.

2 Two examples of these are the BWR main steam  
3 isolation valves that are connected directly to the reactor  
4 vessel and purge and vent valves which directly connect --  
5 they're large valves and they directly connect the  
6 containment atmosphere to the outside atmosphere. We feel  
7 that they should not be on a performance basis, that they  
8 should be on a fixed basis. If a licensee feels that based  
9 on their particular performance they can justify something  
10 else, we would like to have prior review and approval of  
11 that.

12 Can I have the next slide, please?

13 [Slide]

14 MR. LOBEL: The proposed rule will also change the  
15 reporting and recordkeeping requirements of the present  
16 Appendix J. They will be relaxed. They'll be fewer formal  
17 reports sent to the NRC. The information, the results of  
18 tests and the test procedures will be retained at the  
19 reactor site and available to our inspectors. However, even  
20 with that change, the staff is still confident that the  
21 regulations still assure that safety-significant incidents  
22 related to containment leakage rate are reportable under  
23 50.72 and 50.73.

24 An important provision of the proposed rule  
25 requires that licensees compare the results of their testing

1 with previous results to assure that there's no decline in  
2 the level of performance. We feel this is an important  
3 aspect of performance-based testing, that you monitor and  
4 make sure that your performance isn't degrading when you go  
5 to these longer test intervals.

6 Can I have the next slide, please?

7 [Slide]

8 MR. LOBEL: We intend to conduct inspections of  
9 the licensee's implementation of the new rule. We don't  
10 expect that these will be a large additional resource  
11 burden. The most significant change in the rule from an  
12 inspection viewpoint is the algorithm for determining the  
13 test frequency. Since the testing methods won't change, no  
14 more resources should be necessary for actually observing  
15 the testing that are now used and this is fairly minimal.  
16 An important area for inspection will be the licensee's  
17 determination of the pass-fail criteria. Licensees under  
18 the proposed rule will determine what we've been calling  
19 administrative limits which are leakage limits not specified  
20 in the rule that the licensee will set to determine the  
21 pass-fail criteria. We will look at those to make sure that  
22 they're set in a reasonable way and in accordance with the  
23 guidance in the NEI report.

24 As a side benefit to this work, we intend to  
25 update and reduce the number of inspection modules for

1 Appendix J testing.

2 Next slide, please.

3 [Slide]

4 MR. LOBEL: Finally I'd like to discuss  
5 exemptions. Appendix J over the years, because of its level  
6 of detail, has necessitated a fair number of exemptions on  
7 an average of approximately 15 a year. Mostly these are  
8 scheduler. Because of various unanticipated problems,  
9 licensees have not always been able to do their Appendix J  
10 testing when specified in the rule. When they could justify  
11 not doing a test in accordance with the rule, we have  
12 granted exemptions for a delay. The new rule will eliminate  
13 this type of exemption because the testing intervals won't  
14 be specified in the regulation itself.

15 Other exemptions that have been granted over the  
16 years for one reason or another are when licensees haven't  
17 been able to test components that are required to be tested  
18 by Appendix J, containment isolation valves or penetrations  
19 that for some reason can't be tested according to the way  
20 Appendix J specifies. When a licensee can demonstrate that  
21 an alternate approach is acceptable, we've granted  
22 exemptions to that. We have been granting exemptions of  
23 these two types during the rulemaking and we intend to  
24 continue to do that.

25 Some of these exemptions will have to be carried

1 over under the new rule, mostly the second type that have to  
2 do with not being able to test certain components.  
3 Licensees will have to maintain those exemptions. We intend  
4 to give licensees guidance on carrying over exemptions with  
5 the generic letter that will be issued following issuance of  
6 the rule.

7 I'd like to spend a moment discussing another  
8 aspect of exemptions that's arisen during the rulemaking.  
9 In SECY-94-036, which was dated February 17th of this year,  
10 we discussed the staff position on granting exemptions while  
11 the rulemaking was ongoing. We discussed the scheduler and  
12 design specific exemptions and stated that we intended to  
13 continue to grant these where justified and we have. We  
14 also discussed performance-based exemptions. The staff  
15 received a request for an exemption to Appendix J from the  
16 Grand Gulf licensee. We stated in that SECY paper that we  
17 were prepared to review that exemption request because of  
18 its value to the rulemaking process. We have reviewed the  
19 exemption request and it has been very beneficial. Our  
20 review is almost complete.

21 We have also received many plant-specific requests  
22 for exemptions to postpone the type A test until after the  
23 rulemaking is completed. This is what we were discussing  
24 earlier. The staff position has been that we consider this  
25 type of exemption request to be inappropriate since the

1 technical rationale put forth for the postponement is part  
2 of the ongoing rulemaking and that granting these exemptions  
3 prior to consideration by the Commission may give the  
4 perception that the Commission has prejudged the outcome of  
5 the rulemaking. It also would eliminate the opportunity for  
6 public comment on this aspect, which is a very significant  
7 aspect of the proposed rule.

8 This has economic consequences for the licensees.  
9 Like Dr. Dey said earlier, our estimate of the typical cost  
10 of type A test is around \$1.8 million. NEI has requested  
11 that we reconsider this position and we're now complying  
12 with the NEI request.

13 To conclude, the implementation of the new rule  
14 should be fairly straightforward and should benefit both the  
15 industry and the NRC while maintaining close to the same  
16 level of protection to the public.

17 Thank you.

18 CHAIRMAN SELIN: I'm about to do something I  
19 always say you never should you do, which is ask a lawyer a  
20 question if you don't know the answer before you ask.

21 MS. CYR: Maybe the lawyer doesn't know the  
22 answer.

23 CHAIRMAN SELIN: Let me put this backfit rule  
24 question in the most extreme case. If there is a change  
25 which would actually result in a net decrease in cost that

1 would have no measurable impact on safety one way or  
2 another, do we have to do -- would we be precluded from  
3 making that change on a mandatory basis by the backfit rule?

4 MS. CYR: We're supposed to find a substantial  
5 increase in potential. But in this instance we can look at  
6 what the occupational -- if truly you have a net cost here,  
7 then you look to see whether there is a substantial  
8 increase.

9 CHAIRMAN SELIN: That's so inconsistent with the  
10 theory that we don't make capricious changes to increase  
11 cost. To say that this precludes us from making capricious  
12 changes to reduce cost, that's so far apart from the intent.

13 COMMISSIONER de PLANQUE: That wasn't the intent.

14 MS. CYR: But you have here -- if you look at the  
15 overall benefit here, the 2800 rem from a rulemaking  
16 context, we can look at that as representing -- I just am  
17 not familiar enough with what the cost is.

18 CHAIRMAN SELIN: No, no. I'm not asking you to  
19 make an off-the-cuff decision as to whether this saving is  
20 significant enough, but it was more the canonical question  
21 about if the net impact on cost is to reduce cost, do you  
22 still have to show a significant saving to make it  
23 mandatory?

24 MS. CYR: You still have to make some kind of  
25 evaluation about substantial --



1 CHAIRMAN SELIN: Oh, you have to make -- even if  
2 it's a wash from a safety point of view, we can't mandate  
3 just dropping some rule because it has no impacts on safety  
4 one way or another. We would have to do it voluntarily or  
5 show that it improves safety. You know, dropping a rule  
6 that therefore reduces cost.

7 MS. CYR: Everything is totally neutral you're  
8 talking about? I just find that --

9 CHAIRMAN SELIN: No. Reduces cost and it's  
10 neutral on safety. Okay.

11 COMMISSIONER de PLANQUE: Essentially the  
12 situation is you feel the rule is no longer needed for  
13 health and safety purposes and by eliminating it you'd  
14 reduce costs. Can we do that or do we have a backfit  
15 problem?

16 MS. CYR: Well, I have sort of a theological  
17 problem defining that in the sense that that's not a  
18 substantial -- if you truly say it's not a --

19 CHAIRMAN SELIN: Well, I would argue that reducing  
20 cost itself benefits safety, that causing licensees to waste  
21 money that has no net benefit is taking resources away.

22 MS. CYR: We've not really looked at it in that  
23 way in the past.

24 CHAIRMAN SELIN: Let me go on to three things.  
25 Number one, I think you've done a terrific analysis. It's

1 very rare that you've come up and you've made your case and  
2 that the Commission is harassing you saying, "You've done  
3 such a good job that you should have gone even further."  
4 So, please consider my comments in that light.

5 The second is that I realize that once we get out  
6 of a fairly narrow range, you have to look at other benefits  
7 of testing. You can't just do this highly theoretical thing  
8 that all we're doing is looking for leak rates. You find  
9 out other things when you do the testing. So, you would  
10 have to take a look before you did the rule that if you were  
11 going to entertain extrapolations and not just  
12 interpolations, that you've looked at deterministic  
13 questions, engineering questions, a whole lot of things  
14 other than just range because you have a theory that applies  
15 to small -- to differentials and now we're talking about  
16 vast changes.

17 So, it does not follow that we can just drop  
18 testing altogether. One would have to take a look at what  
19 other benefits come from the testing in addition to just  
20 confidence in a good leak rate. I'd like you to do that.

21 Then the third question is tied in with what I was  
22 asking the General Counsel. I really think you ought to  
23 take a look and see if -- I mean your arguments for doing  
24 these things is so overwhelming that isn't there a way of  
25 doing it that would be either mandatory or very close to

1 mandatory? It doesn't mean you have to do it our way, but  
2 to simply life so that if you do it our way -- you know,  
3 we're giving you an option now. If you do it some other  
4 way, maybe you need a license amendment. But if you follow  
5 the generic approach so that you can keep the principle,  
6 which I think the staff is right, NEI is wrong, but still  
7 simplify the execution to the point where there really is  
8 very little if any cost to implement this approach. That  
9 saves resources, it saves exposure. It's a good thing.

10 But the key thing is before we go out with this  
11 rule, I would like to have enough language that supports  
12 going even further than the recommendation without having to  
13 come back. I don't think I'm going to -- I might ask the  
14 staff some questions. I think it's enough that you  
15 understand that those are the questions I have in mind and  
16 make sure they're answered in the general discussion before  
17 the rule goes out. You know, what would the engineering  
18 implications be of going further. It is possible we'll go  
19 further, to make sure that we're protected in case we decide  
20 to draw what I think is implicit in your conclusions.

21 Commissioner?

22 COMMISSIONER ROGERS: I have no specifics other  
23 than to thank the staff for a very informative briefing.

24 CHAIRMAN SELIN: Commissioner de Planque?

25 COMMISSIONER de PLANQUE: Likewise.

1 CHAIRMAN SELIN: Thank you very much.

2 [Whereupon, at 3:33 p.m., the above-entitled  
3 matter was concluded.]

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CERTIFICATE

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

TITLE OF MEETING: BRIEFING ON PROPOSED RULE - REVISION  
TO APPENDIX J TO 10 CFR PART 50 -  
PUBLIC MEETING

PLACE OF MEETING: Rockville, Maryland

DATE OF MEETING: Thursday, December 8, 1994

was held as herein appears, is a true and accurate record of the meeting, and that this is the original transcript thereof taken stenographically by me, thereafter reduced to typewriting by me or under the direction of the court reporting company

Transcriber: Carol Lynch

Reporter: Peter Lynch

**COMMISSION BRIEFING**  
**ON**  
**PROPOSED REVISION TO APPENDIX J, 10 CFR 50**  
**PERFORMANCE-ORIENTED CONTAINMENT LEAKAGE**  
**TESTING REQUIREMENTS**

**JOSEPH MURPHY**  
**MONIDEEP DEY**  
**OFFICE OF NUCLEAR REGULATORY RESEARCH**

**RICHARD LOBEL**  
**OFFICE OF NUCLEAR REACTOR REGULATION**  
**U.S. NUCLEAR REGULATORY COMMISSION**

**DECEMBER 8, 1994**

## **PURPOSE**

- o BRIEF COMMISSION ON PROPOSED REVISION (PHASE I) TO APPENDIX J.**
- o IMPACT ON SAFETY AND BURDEN REDUCTION POTENTIAL**
- o REQUEST COMMISSION APPROVE NOTICE OF PROPOSED RULEMAKING.**
- o DISCUSS PLANS FOR CONSIDERING FUTURE REQUIREMENTS (PHASE II) TO PUT CONTAINMENT FUNCTION ON PERFORMANCE BASIS.**
- o DISCUSS IMPLEMENTATION OF PROPOSED TESTING FREQUENCY CHANGES.**

## **SUMMARY OF PROPOSED APPENDIX J REVISION**

- o LESS PRESCRIPTIVE, MORE PERFORMANCE BASED.**
- o LONGER INTERVAL BETWEEN TESTS BASED ON PERFORMANCE.**
- o CONTINUES TO PROVIDE REASONABLE ASSURANCE THAT CONTAINMENT FUNCTION MAINTAINED.**
- o NO INCREASE IN RISK TO PUBLIC.**
- o PROPOSED APPROACH OPTIONAL; CURRENT PROVISION STILL AVAILABLE.**



## **SUMMARY OF PROPOSED APPENDIX J REVISION (CONT.)**

- o PHASE II TO CONSIDER PERFORMANCE-BASED RULE TO MAINTAIN CONTAINMENT FUNCTION.**

**PROVIDE CREDIT FOR ON-LINE MONITORING, REVISE ALLOWABLE LEAKAGE RATE REQUIREMENTS, AND CONSIDER PUBLIC AND OCCUPATIONAL RISK, AND IMPACT ON LICENSING BASES AND OTHER REGULATIONS.**

- o OPINIONS SOLICITED BY ANPR IN PRESENT RULEMAKING.**
- o REDUCED OCCUPATIONAL EXPOSURE AND INDUSTRY TEST COSTS**

## **COMPARISON WITH CURRENT REQUIREMENTS**

- o INTEGRATED LEAK RATE TEST (ILRT) TYPE A**  
**FROM 3 TESTS/10 YRS TO 1 TEST/10 YRS.**  
**3 VISUAL EXAMINATIONS/10 YRS AS CURRENTLY.**
  
- o LOCAL LEAKAGE RATE TESTS (LLRT)**  
**TYPE B - FROM 1 TEST/2 YRS TO 1/10 YRS.**  
**TYPE C - FROM 1 TEST/2 YRS TO 1/5 YRS.**

## **IMPORTANT TECHNICAL FINDINGS**

- o ONLY 3% OF IDENTIFIED LEAKS DETECTABLE BY ILRTs**
- o FEWER ILRTs YIELD ESSENTIALLY NO INCREASE IN OVERALL RISK.**
- o VISUAL INSPECTIONS IMPORTANT TO SHOW STRUCTURAL DEGRADATION.**

**NO CHANGE FROM CURRENT 3 INSPECTIONS/10 YRS.**

- o 12% OF LEAKS - TYPE B - REOCCUR RARELY.**

**MARGINAL RISK IMPACT BY INCREASING INTERVAL FROM 2 TO 10 YRS.**

- o 85% OF LEAKS - TYPE C**

**MARGINAL RISK IMPACT BY INCREASING INTERVAL FROM 2 TO 5 YRS.**

## **IMPORTANT TECHNICAL FINDINGS**

- o SEVERE ACCIDENT RISKS INSENSITIVE TO CONTAINMENT LEAKS (UP TO TWO ORDERS OF MAGNITUDE ABOVE DESIGN BASIS VALUE).**
- o RISK DOMINATED BY LOW PROBABILITY, EARLY CONTAINMENT FAILURE.**
- o FEWER ILRTs REDUCE INDUSTRY COSTS BY ~ \$330-660M CUMULATIVELY OVER REMAINING LIFE OF PRESENT PLANTS.**  
**TOTAL PERSONNEL EXPOSURE REDUCED BY ~ 400 PERSON-REM**
- o FEWER LLRTs REDUCE INDUSTRY COSTS BY ~ \$30-55M CUMULATIVELY OVER REMAINING LIFE OF PRESENT PLANTS.**  
**TOTAL OCCUPATIONAL EXPOSURE REDUCED BY ~ 2800 PERSON-REM.**

## **REGULATORY GUIDE**

- o ESTABLISHES CONDITIONS TO IMPLEMENT PERFORMANCE-BASED OPTION.**
- o REG. GUIDE ENDORSES NEI GUIDELINE, EXCEPT:  
5 (VS 10 PER NEI) YEARS, TYPE C INTERVAL.  
3 (VS 1 PER NEI) VISUAL EXAM PER 10 YRS.**
- o NEI GUIDELINE EMPHASIZES PERFORMANCE ASSESSMENT AND CORRECTIVE ACTION; ENDORSES ANSI STANDARD**

## **FUTURE PERFORMANCE-ORIENTED RULE (PHASE-II)**

- o ALL ASPECTS OF CONTAINMENT INTEGRITY PERFORMANCE-BASED.**
- o REVISED LEAKAGE RATES TO CONSIDER PUBLIC RISK, OPERATIONAL RISK, CONTROL ROOM HABITABILITY, LICENSING BASES.**
- o PUBLIC COMMENTS SOLICITED IN ANPR OF PRESENT RULEMAKING.**
- o DETAILS AND SCHEDULE DEVELOPED AFTER PUBLIC COMMENTS.**

## Schedule for Final Rule

12/94	3/95	5/95	6/95	7/95
Publish Proposed Rule for Comment	Public Comment Period Closes	Final Rule to ACRS/PDR - CRGR Review	Meetings with ACRS - Final Rule to Commission	Brief Commission - Publish Final Rule

## **CONSIDERATIONS FOR RULE IMPLEMENTATION**

- o NEW CHARACTER OF RULE REQUIRES IMPLEMENTATION CHANGES**
- o TECHNICAL SPECIFICATIONS**
- o REPORTING AND RECORDKEEPING**
- o INSPECTIONS**
- o EXEMPTIONS**



## **TECHNICAL SPECIFICATIONS**

- o IMPLEMENTATION WILL REQUIRE TECHNICAL SPECIFICATION CHANGES**
  - ELIMINATE SPECIFICATIONS APPLICABLE TO CURRENT RULE**
  - ADD SPECIFICATIONS FOR NEW RULE**
- o NEW SPECIFICATIONS WILL REFERENCE REGULATORY GUIDE**
- o NEI OPPOSES TECHNICAL SPECIFICATIONS/WANTS 50.59**
  - ACRS SUPPORTS NEI POSITION**

## **NEED FOR TECHNICAL SPECIFICATIONS**

- o MAINTENANCE RULE JUSTIFIED PER BACKFIT RULE (50.109) :  
"SUBSTANTIAL INCREASE IN OVERALL PROTECTION"**
- o TECHNICAL SPECIFICATIONS REQUIRE LEAKAGE LESS THAN  $L_A$**
- o  $L_A$ : IMPORTANT ROLE IN PUBLIC SAFETY**
- o APP J: SURVEILLANCE FOR  $L_A$**
- o CURRENT APP J: DETAILED REQUIREMENTS**
- o NEW APP J: GENERAL PERFORMANCE BASED REQUIREMENTS**

## **REPORTING AND RECORDKEEPING**

- o EXCEEDING NRC-SPECIFIED LIMIT (E.G.  $L_A$ ) REPORTABLE  
- 50.72 AND 50.73**
- o REPORTING OF TEST RESULTS TO NRC NOT REQUIRED**
- o RECORDS AVAILABLE AT SITE FOR INSPECTION**
- o RULE REQUIRES COMPARISON WITH PREVIOUS CONTAINMENT PERFORMANCE**

## **INSPECTIONS**

- o NRC INSPECTIONS OF LICENSEE IMPLEMENTATION**
- o INSPECTION RESOURCE BURDEN NOT LARGE**
  - INSPECT ALGORITHM FOR DETERMINING TEST INTERVALS**
  - INSPECT LICENSEE COMPONENT CRITERIA FOR PASS/FAIL**
  - PERIODICALLY INSPECT CONTAINMENT PERFORMANCE DOCUMENTATION**
- o NUMBER OF APP J INSPECTION MODULES REDUCED**

## **EXEMPTIONS**

- o NEW APP J LESS PRESCRIPTIVE**
- o NO NEED FOR SCHEDULAR EXEMPTIONS**
  - LESS STAFF RESOURCES REQUIRED**
- o EXISTING NONSCHEDULAR EXEMPTIONS STILL APPLY**
  - DEVIATIONS FROM TESTING REQUIREMENTS**
- o EXEMPTIONS REQUESTED TO POSTPONE TYPE A TESTS**

**BACKUP SLIDE**

# RISK IMPACTS OF CONTAINMENT LEAKTIGHTNESS

