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NUCLEAR REGULATORY COMMISSION

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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BRIEFING ON MANAGING GENERIC ISSUES

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PUBLIC MEETING

Nuclear Regulatory Commission
One White Flint Plaza
11555 Rockville Pike
Rockville, Maryland

Tuesday, December 19, 1995

The Commission met in open session, pursuant to notice, at 10:04 a.m., the Honorable SHIRLEY A. JACKSON, Chairman of the Commission, presiding.

COMMISSIONERS PRESENT:

SHIRLEY A. JACKSON, Chairman of the Commission

KENNETH C. ROGERS, Member of the Commission

STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

ANDREW BATES, ACTING SECRETARY
KAREN D. CYR, GENERAL COUNSEL
JOHN CRAIG, DEPUTY DIRECTOR, DIVISION OF ENGINEERING TECHNOLOGY, RES
JAMES TAYLOR, EDO
WILLIAM RUSSELL, DIRECTOR, NRR
BRIAN GRIMES, DEPUTY DIRECTOR, DIVISION OF REACTOR PROGRAM MANAGEMENT, NRR
EDWARD JORDAN, DIRECTOR AEOD
THEMIS SPEIS, DEPUTY DIRECTOR, OFFICE OF NUCLEAR REGULATORY RESEARCH
CARL PAPERIELLO, DIRECTOR NMSS

P R O C E E D I N G S

[10:04 a.m.]

CHAIRMAN JACKSON: Good morning, ladies and gentlemen. Today's briefing is on the NRC's mechanism for addressing generic issues.

The Commission requested this briefing in part to ensure that the public is made aware of the process that the NRC utilizes for identifying and managing the resolution of safety issues which are of a generic nature. It is important to note at the outset of the briefing that the NRC is receptive to receiving potential generic safety issues identified by the 2.206 petition and allegation processes.

It is also important that potential safety issues are dealt with by both the NRC and the industry in a timely and effective way.

Commissioner Rogers, do you have any opening remarks?

COMMISSIONER ROGERS: Nothing, thank you.

CHAIRMAN JACKSON: If not, Mr. Taylor, would you please proceed?

MR. TAYLOR: Good morning.

With me at the table are Carl Paperiello, John Craig, Themis Speis, Bill Russell, Brian Grimes and Ed Jordan. All have a word or two or thoughts on this subject. Not all are presenters, though.

After the Three Mile Island accident in 1979, the NRC and the nuclear power industry implemented new programs to identify, review, resolve and feed back the important safety related lessons from power reactor operating experience. The development and implementation of these programs were in response to a failure by NRC and the industry to recognize important precursors to TMI and the existence of a number of potential safety issues that had not been systematically characterized or prioritized for action.

Programs within the regions, NRR, NMSS, AEOD and research have been developed and implemented to address this important lesson for power reactors and extended to include all types of licensees. The process is continuous across the range of event or condition severity. The discussion today will address these programs with emphasis on the generic resolution process.

Since 1979, the benefits of corporate learning through both industry and NRC feedback of lessons has contributed to a significant improvement of nuclear power plant safety performance. Important lessons continue to be identified, reviewed and fed back and the process continues to be an important element of NRC's work in assuring health and safety.

I will now turn the program over to Bill Russell.

MR. RUSSELL: If I could have slide number 2, please.

[Slide.]

MR. RUSSELL: I am going to be going through some introductory remarks to set the stage followed by discussions of each of the offices as to how the programs are being implemented within those offices and how they fit together into an agency overall program and then we will have a wrap-up on some conclusions by the Office of Research who has the agency lead responsibility for our generic issues program.

COMMISSIONER ROGERS: Mr. Russell, just before you leave that, at some point will you be saying anything about what the level of effort, FTE and dollar level of effort are in each of these and the total?

MR. RUSSELL: I have backup information. I can address that for NRR. I believe the other offices have information and will be able to address that.

COMMISSIONER ROGERS: It will be interesting to see how the weightings are --

MR. RUSSELL: It is a fairly significant fraction of NRR's resources.

If I could have slide 3, please?

[Slide.]

MR. RUSSELL: Some of this Mr. Taylor has covered

but I wanted to highlight that there are many potential sources of information that relate to generic issues of a safety nature.

We have operating experience both for U.S. reactors and foreign reactors. We have technical reviews that we conduct, we have inspection findings and research results. All of those activities can result in the development of new insights or new information related to safety concerns for currently operating reactors.

These issues can be identified by NRC staff and the conduct of NRC staff activities and we have in each individual's performance appraisal process associated with the reactor program a clear statement that safety issues and the identification issues is a responsibility of individual staff members. This is throughout the program.

In addition, we have comments from the ACRS from their reviews of operating experience and other areas, from industry through licensees, principally through licensee event reports on a plant-specific basis or through INPO through our memorandum of agreement with INPO on exchange of information, from owners groups on the feedback in owners groups and also from vendors and vendor reports that are submitted under 10 CFR part 21.

In addition, as you mentioned, Dr. Jackson, in your opening remarks, we get concerns from the public. In

some cases from employees. We get these through the 2.206 petition for enforcement action process and also through allegations, both of which have been recently revisited by the Commission.

Slide number 4, please.

[Slide.]

MR. RUSSELL: By way of background, I am going to try and characterize broadly how the roles of the four offices fit together and then we will go to the individual discussions for each office.

Generally, NRR's activities are what I would characterize as short-term reactor-related issues usually of a compliance nature. That would be compliance exception to backfit rule. Some operating experience or information comes in that activities are not being conducted consistent with what our current requirements for those licensees. We often implement short-term actions. These might be in the context of issuing information notices to provide information, generic letters, bulletins in a few instances.

These events are evaluated on a daily basis as the information comes in. There is a weekly process to screen them consistently for those few that are felt to be more significant. They are categorized and evaluated and there is an internal process within NRR for doing that. We have also revised our management approaches to follow up on

issues once identified from the identification through resolution and then subsequently into implementation.

The Office of Research has the agency lead responsibility for managing the agency's program for generic issues. Their activities are generally of a longer-term nature, they involve enhancements to our rules and regulations and they are generally issues which are done through regulatory analysis, cost/benefit approaches in the terms of the backfit rule. They are the agency repository for prioritization activities and maintain NUREG 0933, which you will be hearing about more, which is the agency historical documentation on issues and how those issues were dispositioned and how they feed into implementation where implementation is appropriate.

The Office of Nuclear Material, Safety and Safeguards has a wider variety of activities which they license and oversee and, as you will hear, their activities are focused to the particular licensing activity but they do evaluate operating experience and feedback and they follow through in the same context. They do this in the area of medical health, physics, fuel and waste issues.

AEOD activities were set up following the Three Mile Island accident to provide a focus for operating experience evaluation. They look at both reactor issues and material issues. They do long-term trends and analysis and

other activities and they provide feedback back to the program offices where they identify areas of concern from their experience and their evaluations. So they perform these activities and then they provide information back to the program offices which we then track through resolution and completion. All these fit together in a broad agency framework for addressing operating experience evaluation.

What I would like to do now is to turn it over to Research to conduct a more in-depth discussion of their activities which will be followed by each office coming back for overall agency conclusions on what are the next steps.

MR. CRAIG: Good morning.

Could we have the next slide, please?

[Slide.]

MR. CRAIG: This slide provides an overview of the presentation from the Office of Research with a definition of generic issues, the classification, a brief summary of the historical basis for action on generic issues as Mr. Taylor mentioned a minute ago. The initiative really got under way following the Three Mile Island accident and it has continued. And then a flow chart that I am sure Commissioner Rogers is familiar with and perhaps you are, Chairman Jackson, that goes through the process of identification, prioritization, resolution for generic issues.

As Bill noted, the issues that are responsible, have responsibility in the Office of Research are typically the longer term safety enhancement issues that require some amount of research to define, characterize, and to identify the applicable appropriate resolution.

The next slide is a definition of a generic concern.

[Slide.]

MR. CRAIG: This slide is, the significance is that not all generic concerns are generic issues that we need to evaluate so that we can have a generic concern that involves a broad range of activities whether it be design, engineering issues, material issues, hardware issues, that are applicable to all or several members of a class of licensees or they could be concerns at licensee-related of courses.

Next slide, please.

[Slide.]

MR. CRAIG: Generic safety issue is a safety concern that may affect the design, construction, operation, decommissioning of several or a class of reactors or facilities that may require improvements, new requirements, new regulatory guidance. Sometimes, issues or concerns are identified as generic safety issues and, as we work our way through the issue to define it and evaluate it, the

determination is made that no action is necessary and I will talk about an example of that in a minute.

Next slide, please.

[Slide.]

MR. CRAIG: In 1977, not 1976, the Energy Reorganization Act of 1974 was amended and the language in the amendment directed the Commission to develop a plan to specify generic issues, to provide for the analysis of the issues, to list them and to take appropriate action and so that really was the base or the starting point for the generic issues program.

The results of the studies of TMI constitute the first big addition to the generic issues program. The issues that were included before that largely were identified during licensing review process, the ACRS identified a number of the issues as did the NRR staff.

Following the Three Mile Island accident, some 369 issues were added to the plant. 1981 was a milestone because it was the first time the risk/cost evaluates were used to prioritize the issues with respect to their significance so that the staff could better use resources and focus on the more significant issues first.

In 1985, 27 human factors were added to the generic prioritization --

DR. SPEIS: '83.

MR. CRAIG: What's that?

DR. SPEIS: '83.

CHAIRMAN JACKSON: He is telling you that you skipped a step.

MR. CRAIG: I am skipping a step, yes. I wasn't going to read the whole slide.

DR. SPEIS: It is an important milestone because the Commission approved the prioritization process.

MR. CRAIG: Then following the Chernobyl accident, some 32 additional issues were added and then the status in 1995 is that from the time since 1981 approximately -- not approximately -- 252 new issues have been added to bring the total to 820. Ginna, the event at Ginna and Davis-Besse are examples of plant events that added various issues. They are identified and contained in the index 0933 and they are broken out, the identification lists them as Chernobyl or human factors or the earlier events.

0933 will be revised. It is in printing right now. It is revised semi-annually and the Commission could expect a copy of that this month or early next month.

CHAIRMAN JACKSON: Before you go on, how many of the 820 issues have been resolved or closed because the staff has determined that no action is necessary and how many have been fully resolved or implemented?

MR. CRAIG: If we could go to backup slide number

2, please.

[Slide.]

MR. CRAIG: Of the 820, 350 have been resolved, 101 were dropped for low safety significance, low impact. We have a total of eight, there are five that are nearly resolved and three more to be prioritized.

As far as the ones that are fully implemented, I don't have a number that I can give you right now. We can get that number.

CHAIRMAN JACKSON: Would you also pass along to the other offices a copy of this?

DR. SPEIS: I would like to add that these numbers don't include a number of issues on which NRR is working right now which are in the compliance category which still have to be evaluated and prioritized.

CHAIRMAN JACKSON: How much --

MR. RUSSELL: It varies. We will be going into this in some detail. Currently, we have on the order of 50 to 60 generic communication compliance type issues that we are working and a number of issues that the resources involved are that we have formal management action plans to control the resources, et cetera. So we have on the order of 20 of those that are currently open.

This reflects the status of the issues that are formally in 0933. When we come up with operating

experience, it raises a question about compliance since we are not talking about adding new requirements, rather ensuring conformance to existing requirements. We generally handle those differently from the 0933 process.

We are not on the stages of -- we will get to some recommendations to integrate the two together so there is one database of both generic issues that may result in additional requirements plus generic issues that come up from operating experience of a compliance nature or others. So what we are trying to do is get the one database that will be available and we will be talking about that in some detail.

CHAIRMAN JACKSON: Okay, let's go on.

MR. CRAIG: The next slide, please, slide 9.

[Slide.]

MR. CRAIG: This is a flowchart of the generic issues processes defined in 0933. And as Bill mentioned earlier in the identification phase, there are a broad number of sources of identification of generic issues, public plant operating experience, certainly plant events, TMI, Chernobyl and others that were the source of a number of issues being identified and they continue to be identified today. The subsequent slides will discuss these in a little bit more detail.

The next step, prioritization, is the process we

go through, the cost/benefit analysis, we look at the risk and the RES office director approves the prioritization of an issue and it at that point gets entered into 0933 and copies are sent to the ACRS.

Following the evaluation of the issue, a resolution or the fix, the corrective action, is identified.

CHAIRMAN JACKSON: How does that play off with the NRR involvement through those stages and how is the separation made in terms of what is appropriately handled between NRR versus an issue being handled by Research?

MR. CRAIG: This process, the flowchart here, identifies the issues that are -- some of them are being handled by NRR, fatigue and EQ but they have been identified as generic safety issues and they are included in 0933.

As Bill mentioned, the issues that are currently being addressed in NRR as compliance issues would not go through this process and that process is the new process that NRR is developing right now.

CHAIRMAN JACKSON: I understood that but I think I am asking a slightly different question. It has to do with leaving aside the compliance issues.

MR. RUSSELL: As it relates to potential new requirements or enhancements, the project management responsibility for oversight is with the Office of Research. The implementation of individual items may be in a number of

offices and it may require coordination between offices to accomplish the resolution of the task.

John gave examples of issues -- fatigue issues and the equipment qualification issues, which are being tracked, are in the 0933 process. Research has gone through. They have been prioritized. We are now in the resolution stage.

It happens to be that those issues are being jointly worked by NRR and Research and we have a detailed action plan that describes how that coordination is being done.

There is a memorandum between Research and NRR as to how we interact on these issues. There is an office letter in Research that describes their process, which we also follow. We are in the process of internally finalizing the NRR internal procedures to make sure that they are consistent, but the actual staff resources to resolve an issue could be in any one of a number of offices and they could involve inspection activities, et cetera, so we do then have a specific plan for each one if there is a substantial number of resources involved in the resolution.

CHAIRMAN JACKSON: But at the prioritization phase, it's strictly in Research?

MR. RUSSELL: As it relates to an enhancement, a potential new requirement for generic issue resolution, that is Research. They are coordinated with the other offices.

Once the prioritization is done it is fed back to the other offices for concurrence comments prior to the Director of Research finalizing on high, medium, low or drop.

MR. CRAIG: Right and the prioritization itself is reviewed by the experts in the other office so there is a peer review that takes place within the other office so if the prioritization had been done by Research and it involved reactor systems for example, the Reactor Systems Branch in NRR would do a peer review of that prioritization, so there is interaction there and review there.

COMMISSIONER ROGERS: Just another question. Is there in principle a second chart just like this with NMSS replacing NRR in the prioritization resolution and position and so on?

DR. PAPERIELLO: No.

COMMISSIONER ROGERS: Or is that totally different?

DR. PAPERIELLO: No, it's a different process.

CHAIRMAN JACKSON: It's totally different?

DR. PAPERIELLO: Totally different. In part I'll get into it because it is diverse. How do I compare a priority in a high level waste program with SDMP. Different people driven by different considerations.

CHAIRMAN JACKSON: Let's wait till we get to that then, but you are saying, to answer Commissioner Rogers'

question, that it is a different process.

DR. PAPERIELLO: Yes, totally different.

CHAIRMAN JACKSON: Okay.

MR. CRAIG: I want to stay with the flow chart for just a minute. As the resolution is identified, if it is a generic letter or a bulletin or a rule or reg guide, then the normal review concurrence process for that product would be in place, so at that point the offices would begin to get -- there would already be coordination before that, but as we went forward with the rule, revision or generic letter there would be office level review, ACRS, CRGR review, Commission review if it was appropriate.

The imposition phase would be the actual issuance of the document, rule, reg guide, et cetera, and at that point then implementation would be the first step where a licensee would become involved and they would make a response, a commitment to meet the due date or provide a schedule back to NRR and then the verification processes as we go through and identify the resolution and the imposition steps we would determine what type of inspection would be appropriate to verify that the corrective actions have been implemented and then that would be promulgated as part of the NRC Inspection Manual through a temporary inspection notice.

Next slide, please.

[Slide.]

MR. CRAIG: We have talked about identification. The only points that haven't been touched on perhaps are the sources that we get allegations in periodically that may identify generic concerns and as a review of topical reports or IPEs are two additional sources for identification of issues.

CHAIRMAN JACKSON: Do you know how many have been identified through the 2.206 petition and through allegations?

MR. CRAIG: The number is small. I don't know a number but --

MR. RUSSELL: I think that as it relates to enhancements that are regulations, I don't believe that we have many that fall into that category as far as new requirements. Generally allegations and petitions relate to noncompliance with some existing requirement so it generally is in the activities of the things that NRR looks at and we do not have the same historical record because we really have just restarted what I would characterize as consistent management controls on these issues last summer.

We have been operating under some interim office guidance trying to develop the data base and the other information. We'll talk about that in a moment, but there are quite a number that do come in through allegations and

2.206s, so it is a significant source.

CHAIRMAN JACKSON: Do we -- when you talk about it, will you be indicating how we keep the individual and/or organization informed on the Staff's progress in resolving any issues?

MR. RUSSELL: Yes. Jim just reminded me that probably the one that was most significant in the context of allegations or concerns relates all the way back to equipment qualification in harsh environments and that goes back into the late 1970 timeframe prior to Three Mile Island and some of those issues are still being looked at.

MR. TAYLOR: Yes. That was outside --

MR. RUSSELL: That was petitions from the Union of Concerned Scientists, UCCS.

CHAIRMAN JACKSON: Okay, thank you.

MR. TAYLOR: Yes, that is a good example of a very important subject that took a number of years to resolve but it was an important subject. It led to a rule. It was brought to the agency from outside. I was not here.

MR. RUSSELL: Yes, I was here and it was brought from the outside.

CHAIRMAN JACKSON: Okay.

MR. CRAIG: The next slide, please.

[Slide.]

MR. CRAIG: We talked about prioritization and

covered some of the information on the slide. I'll note that the prioritization is a determination that's made by the staff with input from contractors for cost estimates, risk assessments and consequence calculations so it is both a quantitative and qualitative assessment of the benefits and the cost of proposed resolutions

I'll note that when license renewal became -- when the rule was being promulgated the staff went back and reviewed all the generic issues that had been prioritized as medium and low to determine whether or not if an additional 20 years of operation had been included in the original prioritization analysis whether or not the decision would have been changed.

As a result of that review there were three to five that had been low that would have shifted to medium but the overall categorization of the issue and conclusions would not have changed, so that the prioritization process includes consideration for both 40 and 60 years of operation.

I noted that each prioritization is subject to peer review by technical experts on the staff.

Next slide, please.

[Slide.]

MR. CRAIG: Talked about the resolution phase. It's the identification of the action as necessary, whether

it's a task action plan analysis, experiments, generic letters, rules, changes to reg guides or no actions -- a broad spectrum of those -- the imposition, the implementation and verification are relatively straightforward although it can take a fair amount of time.

I'll talk about two issues, generic safety issues, as examples. One is Generic Issue 15 and it relates to radiation embrittlement of reactor vessel supports.

It's a high flux isotope reactor at Oak Ridge and as part of their surveillance program they identified the supports were becoming brittle faster than expected and so there were some questions about why and what that meant.

As a result, the work that was done there, the determination was made that the embrittlement was caused by the gamma flux in addition to neutrons and the particular configuration there is that the metal was in a high gamma field, which is not the case at power reactors, light water power reactors, so it was a case where there was a phenomenon that was identified that was not clearly understood. It was evaluated and we determined that no action was necessary.

Another issue that has been recently identified is Generic Safety Issue 165. It has to do with the operation of small, two to three inch, spring-operated valves and we have seen some problems with valves opening and closing,

failing to open, failing to close.

That was an issue that was identified by a member of the NRR staff and so we are looking at that and that is in the early phases of work right now. It's been prioritized, so those are examples where no action was necessary. One I don't know whether any action will be necessary for the valves or not, one by the NRR staff and one at a research reactor.

CHAIRMAN JACKSON: Did it turn out to be an issue for research reactors, more broadly?

MR. CRAIG: Interestingly, it didn't. We provided the information to the research reactor community at large and it was the configuration of the location and the fact that the other reactors don't have components in that kind of a gamma field.

CHAIRMAN JACKSON: So in that case you are saying not only did it not turn out to be an issue for power reactors, it turned out not to be an issue for research reactors except in one case.

MR. CRAIG: That's correct.

CHAIRMAN JACKSON: That led to it -- okay.

MR. CRAIG: Okay, and with that I'll turn it over to Brian Grimes.

MR. RUSSELL: If I could just highlight one other comment, and I think it is important. It's not in the

slide.

One other thing that came out of the requirement to develop generic issues relates to licensing decisions and how you proceed to license facilities given that there are generic issues that have not yet been resolved.

You essentially need to develop a safety rationale as to why it is okay to proceed with licensing with these generic issues open. That came out of a River Bend decision. That's been part of our activities routinely since the resumption of licensing following Three Mile Island.

In each case for each generic issue there is a basis even though the issue is not yet resolved and it may result in some new requirements, why it's okay in the intervening period to continue.

That also applies to issues that may come up of a compliance nature. That is, until you have decided what needs to be done to resolve the issue, to get back into compliance, what is the basis for continued operation. We generally have documented these bases for continued operation in 0933, in the action plans associated with the issues that are prioritized I believe it's high and for all unresolved safety issues does it include mediums and highs?

MR. CRAIG: I think it's just highs.

MR. RUSSELL: So that is the approach that has

been taken in that area as it relates to items that are of a compliance nature. This is an area that we found we have not done such a good job in the past of documenting the rationale as to why it is okay to continue.

We are now doing that and for each formal action plan we are documenting the bases for why with this compliance issue potentially outstanding it's okay in the interim until such time there's corrective action.

CHAIRMAN JACKSON: When you say "document" you mean that you have done some analysis --

MR. RUSSELL: Yes.

CHAIRMAN JACKSON: -- and if there's any compensatory action that has to be taken, that is also a part of it?

MR. RUSSELL: Those compensatory actions would have been considered but there is in fact a safety rationale for these. We are now quarterly publishing on the status of the action plans. The action plans themselves go into the Public Document Room and this section of the action plan is publicly available.

This is part of the regulatory process that had not been done as rigorously in the past as it relates to compliance issues and issues associated with operating reactors.

We were doing a very rigorous job as it related to

licensing of facilities and the safety evaluations for new plants following the decision in River Bend. I believe it was ALAB-444.

CHAIRMAN JACKSON: And you have been doing this, this has been available to the public since when?

MR. RUSSELL: We have now started doing it more rigorously and completely since the summer of '94.

It was somewhat hit-and-miss before that and if the issue was not deemed to be very safety-significant we were less rigorous in documenting, so this is an area of process improvement within NRR that's been going on for the last year or so.

CHAIRMAN JACKSON: So it is publicly available.

MR. RUSSELL: Yes, it is. We started that in October.

COMMISSIONER ROGERS: Well, there's another question relating to that and that is do you have any kind of a cutoff on time, the time that one allows these compensatory measures to exist and be out of compliance even though these measures have been put in place?

Is there any cutoff and is there some process for going back and seeing that there aren't any of these that linger on for years and years and years?

MR. RUSSELL: The answer is that there is not a cutoff. For example, compensatory measures for thermo-lag

issues have been in place for some time. We had reviewed and found that those compensatory measures were acceptable.

What we are doing is we are developing indicators of where we stand on performance, that is, how old are the issues, how long has it taken us to get them to resolution and put them in the implementation stage.

Some they are relatively quick. Others are longer and you'll hear that we are looking at developing some performance indicators of our own as it relates to the various priorities, how old are they, what is the oldest, so that we can bring some management discipline to this process. We are not there yet.

CHAIRMAN JACKSON: The compliance on the compliance issues if there are action plans associated with them, those don't have time lines built into them?

MR. RUSSELL: They do. Each action plan has a schedule for resolution with detailed milestones, and those are reviewed at my level monthly within NRR as to where we are in making progress in implementing, and we publish those now quarterly, and they are also available electronically.

CHAIRMAN JACKSON: So how does that relate to Commissioner Roger's question about a cutoff?

MR. RUSSELL: The issue is one of not only resolution but also implementation. If implementation requires studies, analysis, evaluation, the compensatory

measures a licensee may take could be in place while those issues are being studied, resolved, et cetera.

The example being thermal lag. Some facilities are literally going to take a few years to implement the corrective actions. In the meantime, they are going to continue with fire watches and other compensatory measures which were found to be acceptable.

COMMISSIONER ROGERS: I think there has been a little problem that I have seen in the past, and that is the difference between resolution and implementation. Resolution doesn't mean everything is taken care of. It just means that you have identified a means to deal with it and approved it, but it hasn't necessarily been carried out yet.

MR. RUSSELL: That's correct. In fact, typically in the context of imposition, we will go out with either a rule which is less frequent, more often it is a regulatory guide or a revision to the standard review plan or a generic letter. Sometimes they are future actions to be taken, other times they are backfit to all licensees, depending upon how the regulatory analysis comes out. But even within that context, an individual licensee can propose another alternative that may be more optimal for them from the standpoint of resources, cost, et cetera, and so they can propose an alternative approach, and then that gets involved

in reviewing that approach and determining whether it is acceptable or not, so that the imposition phase can be extended.

We do have within NRR a tracking system for every issue that goes into that. It is called a multi-plant action. Each one is tracked with a specific action open on the plant, and it is tracked from the date of issuance of the generic requirement, whether it is a generic letter, rule, et cetera, until such time as it is implemented and closed out and verified with inspection activity. Some of them are quite old. On average, they generally run in the range of three years. We have goals for tracking those faster. We provide reports to the Commission annually on where we stand with those. That process is longer.

CHAIRMAN JACKSON: What then do you use as performance measures that determine or measure success?

MR. RUSSELL: We are working on that now. We have some initial pilots we are using. We have been collecting data for about six months. We are looking at them in the context of the priority, and we use a one, two, three, four priority in NRR as compared to the high, medium, low drop, but it is basically very similar. Looking at the priority, the age of it, performance against plan, if there are significant resources involved, through resolution, and what kind of progress is being made. But we are in the early

stages of doing that. We are not as experienced with that as we are with licensing actions and processing license amendments, exemptions, request for relief. We just don't have the database or the experience yet.

CHAIRMAN JACKSON: Is it also a question of resources?

MR. RUSSELL: It is, but we have found that if we don't manage these effectively that the resources that are necessary to recover from that are often greater than expending the resources in the first place. So we are allocating resources internally to better manage this activity. The total effort in NRR is probably 20 percent of the total resources of the headquarters staff to go into one aspect or another of monitoring operating experience.

CHAIRMAN JACKSON: That is on an FTE basis?

MR. RUSSELL: That's correct.

What I would like to do is now have Brian take and walk you through what are the changes we have put in place with interim office letters, and then how we are going to go from the interim situation to a final office letter and get it into the agency's overall program or procedure so that it is a well documented, complete program.

[Slide.]

MR. GRIMES: Slide 13 provides a little overview of what I plan to talk about today in terms of the NRR

process. As Bill mentioned, about 20 percent of our effort goes into the activities, generic activities, I will talk about today. We have previously mentioned that we focus in NRR mainly on the compliance activities as opposed to the enhancement activities in research, and we look at the daily information that comes in. This includes events, allegations, Part 21 reports, and we determine immediate and short-term action.

The allegations, which you mentioned, Chairman Jackson, are treated separately in terms of tracking. For many of the events, we screen these and put them in a database if we think they are not significant enough to require action. However, every allegation is followed through to a documented completion, including communication with the alleger to determine that we have properly interpreted their concern, updating them on status if it takes a long time, and then a final closeout documented with the alleger. So each of those is handled more rigorously than we do the body of operating information.

I guess in terms of relationship between the offices, I think of NRR as doing triage on the initial incoming. We focus on the things that need immediate action, research has a long-term view on generic issues, AEOD has a long-term trending view on events that come in. We do what needs to be done immediately in terms of reactor

safety.

CHAIRMAN JACKSON: Where is that division made? Is it made in your office or is it made in research, or is there an interoffice?

MR. RUSSELL: That is one of the issues that was a weakness in the past in NRR is we did not have a centralized consistent screening of activities. If it was a report coming in from a vendor, it would often go to the vendor inspection branch for resolution, and those were handled separately. So we were somewhat in separate silos as to how operating experience was being evaluated.

What we have done is, we have pulled it all together. We have one organizational unit responsible, and we have participation from the other offices in both the review of the daily event calls and in the weekly screening, so it is managed and conducted by NRR, but it has participation of the other offices as well.

MR. GRIMES: Briefly, the new process that I will be talking about tries to assure, as Bill mentioned, the centralized screening and structured prioritization for the activities in NRR, provides that designated task managers for the issues that we decide need to have effort put into, provides a means for control and tracking of these activities. We try to assure a systematic documentation of the regulatory assessment. By that, we mean why are we

doing what we are doing, and why are we not doing more. We could react to things by, in the extreme, shutting down facilities, but, in general, we look at the safety basis for why do we have assurance that we can allow plants to operate while we work on the problems. So that is what that regulatory assessment is about.

We provide the information publicly, the status of the major items, and particularly the closeout of the activities that we are working on in terms of information notices and generic letters. We assure coordination in our new process among the offices, and we then are working on what you mentioned previously, methods to measure our program's success.

[Slide.]

MR. GRIMES: The next slide, 14, just repeats the overview that Bill mentioned before. That in the past we had more effective project management on plant specific issues than we did for generic issues and we have now, at the present, integrated this into a central point in the organization, although it still has input from all the points of NRR technical activities, but we manage it in one place.

The next few slides I would like to present how this integrated process works.

[Slide.]

MR. GRIMES: First, Slide 15 is the identification and management of one important point that we emphasize to all the technical staff is that even though we have centralized this process, all staff are still responsible to be alert and identify potential safety issues. Then those are fed into a central screening process, and we store these data that come in in a database that can be accessed later, make sure we have access to trending types of information.

The multi-discipline review is done on a daily basis with NRR and AEOD on conference calls, and on a weekly basis by a review assessments panel which also involves the Office of Research participating. This is one of the ways we integrate our activities and make sure there is not a duplication among the offices.

[Slide.]

MR. GRIMES: The next slide covers the difference between immediate action and the more systematic process for short-term issues. Occasionally, once or twice a year, typically, we will come up with a situation that requires really immediate action. There is not time to go through the process of waiting for the weekly panel meeting to screen this type of thing. There NRR managers consult and we get an immediate information notice out so that the industry knows what the topic is, and we proceed through an expedited process with the committee to review generic

requirements, the CRGR, to issue whatever bulletin or generic letter might be needed.

CHAIRMAN JACKSON: Could you give me a recent example?

MR. RUSSELL: The debris in the suppression pools in the boiling water reactors. We had earlier been looking at strainer effectiveness and debris, which would be caused by an accident. We had information from the Limerick event which indicated that cleanliness, foreign material exclusion could also cause a loss of safety function. We promptly followed, issued the information notice, and we went through the process, did not go out for public comment, et cetera, we took it through, the CRGR review was after the fact, sent the information to the Commission and then issued it. So that is an example of one that we put on a fast-track.

Essentially, on a case-by-case with management involvement in processing it through. The procedures for doing that are laid out, but it does not follow all of the detail that you would for an issue where you have time to address it in a more systematic way.

MR. GRIMES: The short-term issues are covered in a more systematic manner, and the panel meeting weekly reviews and proposes a regulatory action and a timeframe for completion for these items. Also makes sure that the staff has a good understanding of what the justification is for

the effort and the priority, and the type of action that is planned.

[Slide.]

MR. GRIMES: Slide 17 describes the decisionmaking process and prioritization by the panel. The panel has a charter which describes the guidelines on the factors that they are to consider. The acronyms or initials here stand for the Events Communications Branch, the Plant Systems Branch -- I am sorry, the Probabilistic Safety Branch is PSB, Human Factors Branch, Research and AEOD. So we have multiple membership. We try to bring multi-disciplines to bear including the risk aspects.

The technical resources are brought in as appropriate to the particular topics. If it is a structural problem, we have somebody from the Structural Branch. If it is a valve problem, we would have somebody from the Mechanical Engineering Branch in the panel discussions. The panel considers generic aspects, such as the number of plants this affects. If it is clearly just one plant, the panel may not even see it because the staff has screened it out. But if they do decide that it is likely to affect only one unit or two units, they would decide not to proceed on a generic basis but have somebody followup on a plant specific basis.

In other words, consider the risk factors, is it a

common mode failure, could it go undetected for long periods of time, that sort of thing.

The potential responses of the panel involved, they could decide that we have looked at this before, and this is just another example of someone who did not implement it correctly, and we need to followup on a site-specific basis, or that it is not significant enough to warrant any action.

Even those that are not significant enough as viewed at the present time are kept in a database so that if another such event comes up and somebody researches it, they will find that we had that sort of event six months ago, or three years ago, and we can pick up a pattern and correct our earlier error in judgment.

The panel may propose the type of short-term action, they may decide that it involves enhancement or a backfit. In that case, it needs to be referred to research for their prioritization in a formal manner. They may decide to recommend a particular kind of generic communication. Of course, all these actions that are initiated by the panel have to go through the normal branch and division and office review process. If it is a generic letter or bulletin, for example, it not only needs technical staff review but CRGR review before it finally is issued.

The panel focuses on initiating the actions that

it believes are needed and screening out those things where the staff does not need to spend effort.

[Slide.]

MR. GRIMES: The next slide, 18, indicates that on each of the items where there is to be effort expended on a generic area, there is a task manager assigned, usually within the Events Assessment and Generic Communications Branch. Those things that look like they are going to have large amounts of effort put in or have action plans developed have a separate guideline within NRR on if it is going to take more than a year, it is going to take more than 800 hours of staff work, you should develop some more formal plan. That may occur not at the panel meeting, but as the staff starts to develop the issue. In that case, the technical staff would initiate the development of the action plan.

We issue internal monthly reports for the action plans, the rulemaking, and also a list of the other items, the 50 or 60 items that Bill mentioned that are being worked on for information notices or generic communications, other generic communications.

We publish a public status version of this quarterly and, very importantly, Bill does a personal review of this report on a monthly basis. In fact, tomorrow we review the December internal report with Bill. We highlight

things that are slipping and things that have significant technical issues arising on them for his information and also for his direction as to strategy and coping with the tougher issues.

As Bill also mentioned, we are developing performance measures for the process which I will have on the later slide.

COMMISSIONER ROGERS: Just before you leave that slide, Mr. Grimes, that 800 staff hours threshold, where did that come from? That seems like a pretty high threshold to me.

MR. RUSSELL: We have, for all activities, they go into a computer based tracking system, and we can estimate resources to complete, we can assign reviewers, and that is done electronically online in NRR, and that is the way we manage all of our licensing activities, et cetera.

The feeling was, if we start to approach a half-a-year of staff effort, then you needed to have a formal plan of action, milestones, schedules, assignment of responsibility, and some way for management visibility to track the issues.

There are lower thresholds, for example, as to what can be approved at a branch chief level, division director level. This is the top level. This requires division director or associate director approval of the

activity and a formal plan of action and milestones for completion, and once they lay that out, they know that they are then accountable to me with the monthly meetings to describe where we are in addressing these.

So, depending upon the magnitude of the effort, we put it in different control systems. That is not to say that things less than 800 hours aren't planned and scheduled, it is just that they are done online electronically using the WIS system within NRR.

COMMISSIONER ROGERS: I see. So, in this case, action plan has a very specific meaning.

MR. RUSSELL: Has a very specific meaning. We have an internal office letter that describes it. It has a plan of action, milestones, technical approach described, interface with other offices, particularly if you are also talking about gathering information from sites, if you need to go to sites and gather information by way of conducting activities at sites, that is another criteria for when you would have a formal action plan.

MR. GRIMES: This is essentially the top 20 or so items that are being looked at.

MR. RUSSELL: We have a list. We have a back up slide with a list of the action plans so that you can get a feel. These are generally issues you will be well familiar with. We are working on one now for 50.59 reviews.

MR. GRIMES: If we back up to Slide Number 10 and 11, we can show them in sequence.

[Slide.]

MR. GRIMES: That shows the first 15. Let's hold Number 10.

MR. TAYLOR: These are recognizable.

COMMISSIONER ROGERS: Yes.

MR. GRIMES: And Number 11.

[Slide.]

MR. RUSSELL: We also have some that are internally working that we have not yet completed the action plans on for issues that have recently emerged that we are providing responses back to the Commission on and to senior management with respect to how we are planning these activities, but essentially when we get into a staff activity that is going to require a significant chunk of resources to complete, whether it is a revision of inspection procedures or it is a licensing issue, or it is imposing requirements, we use this as an internal tool to manage how we are expending our resources to ensure that we have adequate controls over how they are being expended.

MR. GRIMES: Go back to Number 19.

[Slide.]

MR. GRIMES: This just notes some of what we have talked about in terms of documentation strategy and

structure. We have the action plans and we have rulemakings, other guidance, regulatory guides sometimes issue, and generic communication and compliance activities, typically information notices, generic letters or bulletins. I mentioned the tech searchable database for quick access and to try to minimize duplication of past effort.

And then we are developing the use of 0933 which research manages to have an annex to cover the NRR activities. So that somebody in one place, in one document, can find not only the generic activities that research is managing on an enhancement basis, but also the status of the major compliance activities that NRR is tracking.

[Slide.]

MR. GRIMES: Slide 20, to briefly mention the planned future activities, we plan to continue to issue our public quarterly version of the action plan or generic communications activities to the public, and we are in the final stages of finishing two NRR office letters which we have been working with on an interim basis since last March, and we have gained experience with those and we are now finalizing some final office letters to provide the staff guidance, both on the action plans and on the screening process for NRR activities.

We plan to have some staff seminars in the future to make sure that all the staff, not just the staff that has

been doing this activity, is well aware and understands how they fit into the process.

[Slide.]

MR. GRIMES: Then the performance measures are covered on Number 21.

We need to take a look at how effective our process is. As Bill said, we have just been collecting data for about six months in a systematic way, but we plan to track the number of items that are current, the average age of the various classes of items, and what priorities we are assigning to these items, and how much effort we are putting into the various classes of activities. If one of these parameters starts to diverge, we then need some management attention to say, is there a reason for that happening, or is the process escaping us, do we need to better manage our resources and focus our resources on the activities we think are most important.

COMMISSIONER ROGERS: Excuse me, just before you leave talking on this resource question. Have you considered going back retroactively to see what the cost to the licensees were of implementing any of these generic fixes? We do a regulatory analysis at some point and that gets set aside after we decide to go ahead. Do we ever go back and see how well that regulatory analysis of costs of implementation actually compares with what it did cost

licensees to carry out a generic letter?

MR. RUSSELL: We have had feedback from licensees as it relates to the regulatory analysis in what I will characterize as NRC assumptions or estimated costs compared to what licensee actual cost may be. This is one of the reasons we changed the process to go out and seek public comments on that at the time we are going forward such that if the industry has information, they can provide that information.

As it relates to this part of the activity, which is resources expended to resolve, what we are trying to do is develop some information internally on what does an average generic communication activity require? We end up with resource estimates for action plans, but we do our budgeting before we know about the activities, so this is one where we do need to develop some more information to have a better handle on what it has cost us in the past to get to the point of resolution. We have very good information on what it takes to implement. That is, to track from a multi-plan action through implementation, what is the cost to review, because we collect that information on a plant specific basis, and we can provide reports as to what any particular issue cost because it is fee billable, et cetera. So we have that information.

The cost for individual licensees to implement we

don't collect. What we do is, we inspect to ensure that they have, in fact, implemented the activity in a manner that is satisfactory.

CHAIRMAN JACKSON: You might want to as far as the most high priority items, if the licensees are willing to give you that information and to track that with time to implementation to get a sense of how effectively and how quickly and what it is costing for them to, in fact, comply.

MR. RUSSELL: I can give you a general feel that usually the more expensive or the higher the impact the item, the longer it takes to get it implemented. We have seen that in some extreme cases.

CHAIRMAN JACKSON: Also, there is also an issue, of course, I would assume, of choice. I mean, there must be some different modes of implementing a solution or a resolution that can impact what it would cost the licensees.

MR. RUSSELL: That is typically the case. We go out with the generic letter, we identify the issue, we identify an acceptable resolution of the issue, but that doesn't limit the licensee to only that issue and they may propose something else.

CHAIRMAN JACKSON: So that is not the resolution.

MR. RUSSELL: It is not the resolution. They have options to propose back, and then we would review that.

MR. JORDAN: We do have one feedback path. The

CRGR periodically meets with utilities individually, and that is one of the questions we ask them about the cost relative to implementing generic actions. We, about four years ago, sent out a questionnaire on about five generic issues that were implemented to compare what the staff's estimate of the costs were with the actual implementation. Surprisingly, for that set, the cost were reasonably close. There was a large gradient among the licensees with regards to cost, which leads to the perception by some licensees that this was much more expensive than it should and, of course, others that didn't have huge costs associated with that particular generic issue.

So I think one of the problems we have is, there is a remarkable gradient between licensees for a particular action.

MR. RUSSELL: Thank you, Ed.

MR. GRIMES: I think that completes NRR.

DR. PAPERIELLO: Yes. The NMSS process for review of events and identification of generic issues is not centralized as it is for reactors, and this is mostly because of the very diverse areas that are regulated by NMSS.

We have issues that look like generic issues but don't map one on one to those that are in NRR. For example, burn up credit for spent fuel, the work done on the Bowman

report for underground criticality, the radiographer certification, the key technical issues and the high-level waste program are all issues that, in many ways, look like the generic issues on the reactor side of the program, but they effect different types of licensees.

Our issues follow the program, so we have a medical management plan that addresses issues that are in the medical area. We have SDMP program that addresses areas in decommissioning sites. We have risk harmonization with the EPA. We have our key technical issues for the high-level waste repository and are very unique to Yucca Mountain, they are not generic in the sense that they even affect other high-level waste methods of disposition. Some of them, in the case of the generally licensed gauges, we have an effort ongoing with the Agreement States, and some of these issues cut across the Agreement States.

So the events are screened by the staff and issues are reviewed by the staff that are in the particular program areas. We managed the programs this year, for the first time, through our operating plan. In which we are trying to balance the resources applied to licensing in a given area, development of guidance in a given area, the issues, the inspection and licensing procedures.

We do have a followup on events mostly done by the regional inspection staff. In certain areas, we have put a

lot of resources. For example, we have established a medical misadministration coordinator who follows up very closely on all our efforts on all misadministration to guarantee that everything that is in the management directive on misadministration followup is accomplished, that we have a database on every bit of information we have on the misadministration, and it is all retrievable.

We have also used the AEOD nuclear events database to keep the information on the events and it is a database that can be screened for identification of generic issues.

Since 1987, the NMSS division director has held monthly meetings to review all of the events that have occurred in the previous month and also to look at events that are being followed closely by headquarters. I have expanded these monthly briefings to include participation by the regions, by teleconference, and we also include the agreement state events in this review.

COMMISSIONER ROGERS: Do you include research in that? Is there any involvement with research in that?

DR. PAPERIELLO: AEOD but not research. AEOD, state programs and NMSS have these meetings.

The next slide.

[Slide.]

DR. PAPERIELLO: In 1994, there was an event review task group looking at event followup and its major

findings were that the material event review was far less formal than the reactor event review. There was a lack of uniformity in reviewing agreement state events and that there was the -- in the materials program, there were far fewer resources for event followup review on the reactor side.

I am planning and have begun the creation of a regional coordinating and event section which will more closely tract and support reactive inspections, looking at events and supporting the reactive inspection part.

CHAIRMAN JACKSON: Let me ask you three questions, Carl, if I may, that relate to this viewgraph.

First, to what extent is there identification of generic issues from other sources? You know, other than the event review source that you have essentially focused on here?

Second, to what extent is risk assessment used in event review and in the identification of generic issues?

Then, I guess, third and perhaps you are going to talk about this more, is what specifically is being done to formalize the process for identification, prioritization of generic issues within NMSS to move toward promoting where, as much as possible, uniformity and effectiveness perhaps with consistent standards? You mentioned having cognizant staff so maybe you could speak to those three.

DR. PAPERIELLO: We formulate issues and I don't want to say generic issues because some of the issues are so narrow for one facility only that, although they look like generic events or generic issues, they are just not. I mean --

CHAIRMAN JACKSON: But that is presumably what your categorization and prioritization process would do for you?

DR. PAPERIELLO: But they are prioritized, and it is not a very formal process, within the given program because there is not a great deal of fungibility of people or resources from one program to another. In other words, the resources involving in a medical area are not too useful in resolving criticality issues in an underground repository and that is what makes the cut across programs far more difficult.

CHAIRMAN JACKSON: I am not talking about that. I am talking about within a given program area.

DR. PAPERIELLO: Mostly the availability of resources to work on it and need to meet certain deadlines, whether it is a license application or a standard review plan. That normally determines what gets the attention.

Slide 24.

[Slide.]

DR. PAPERIELLO: Since 1980, NMSS has issued

approximately 180 event-related generic communications, mostly information notices. I have given an example of a variety of information notices and bulletins that we have issued in the past.

I would note that currently, for giving an example, we are following a problem with one type of connector on a high dose rate brachytherapy unit. This was identified at our monthly events review. It only involves one brand of machine. It is an imported device. We issued an IN to medical licensees on the problem, we issued a CAL to the distributor of the connector to stop its distribution and it is currently being redesigned. It has been redesigned and we are following the effectiveness of the test of the redesigned connector.

But, you know, our events don't involve hundreds of hours of followup work. On the other hand, there is just a large number of them in very much unrelated areas and since 1988 we have issued a newsletter on a quarterly basis to all our licensees and include information on various kinds of events and issues that we are working on to bring to their attention.

The NMSS program just does not look like the reactor program for a whole variety of historical reasons.

MR. TAYLOR: Before we leave that slide, I would like to point out to the public that it was not a

criticality incident at Wilmington but a control for criticality. Just so nobody misinterprets that, right, Carl?

DR. PAPERIELLO: Right.

MR. TAYLOR: Excuse me for interrupting.

CHAIRMAN JACKSON: Clarification is always welcome.

DR. PAPERIELLO: I am not sure I answered all your questions.

CHAIRMAN JACKSON: I will come back to you.

MR. JORDAN: Could I have slide 25, please.

[Slide.]

MR. JORDAN: This is simply an introductory slide to the AEOD activities. I would emphasize the role as an independent analysis in the evaluation of operational safety experience.

CHAIRMAN JACKSON: I am not sure we can hear you too well.

MR. JORDAN: Okay.

To communicate lessons of this experience to both industry and the NRC and the office does have the primary NRC responsibility for long-term review of operational experience, for examination review of foreign experience included and we do cover all NRC licensed activities and I confess the same problems in our shop that Carl Paperiello

has addressed in terms of the wide spectrum of technical skills and I would say a paucity of information in terms of reports.

That is getting better and we are working at using the databases and I will talk a little bit about feedback of operating experience for the materials area.

Could I have the next slide, please.

[Slide.]

MR. JORDAN: The products associated with review of operating experience have I would say evolved into two categories. One is a set of databases and data collection systems that one can trend and evaluate experience and try to identify sequences or precursor events. And the other is in-depth review, examination of collections of experience to try to then support a feedback.

Out of these, the ones that I would say are growing in interest, the common cause figure database is an area that we are working on that I expect to see some gains in. System reliability reports is an area that is growing. I expect to see gains there.

We do have the rulemaking as the Commission is aware in progress and some coordination for voluntary collection of the data with industry.

Could I have the next slide, please.

[Slide.]

MR. JORDAN: This is a set of examples of four issues that were initiated in part by AEOD studies and reports and I would start with the safety valve reliability issue. That particular item, as was stated earlier, was identified also by NRR staff. This is spring-actuated safety and relief valves. The issue is one that valves frequently don't meet their tolerances and so there was a need for study and now it is established that there is a need for standard practices by the industry in maintenance focus.

Motor-operated valve problems, that has covered a lot of time, a lot of effort. The initial issues were of the actual torque settings, perhaps not providing assurance that the valve would operate in an accident condition and has grown to a very large effort which has improved the reliability of motor-operated valves substantially.

Servicewater system degradation, that started -- each of these evolved from some clue along the way. That started with concerns over the development of bivalves that then grew and collected in systems. When they died, their shells came loose and suddenly you would have a blockage of heat exchangers. When one examined that, then one found that many of these heat exchangers also had serious silting that built up and there were no tests that were measuring in fact the effectiveness of the heat exchangers, we were only

measuring flow, because these heat exchangers and safety systems weren't challenged with heat loads. So this led to the generic issue 32 and 36.

Air systems also was a slowly evolving issue where air systems, in general the compressors and the accumulators, are non-safety grade, however they feed safety-related equipment, instruments. those systems, I think our first clue was desiccant powder began collecting in solenoid valves, small apertures and generated then failures. These were common mode failures and so this was a basis for generic issue 43.

So these are examples of issues that AEOD was involved in servicing through studies that led to generic issues.

Could I have the next slide, please.

[Slide.]

MR. JORDAN: The next area is contributions to resolution of generic issues. We want to be instrumental in not only identifying but resolving. So some of these are on both lists so recommendations on the part of the studies lead to resolution.

In addition subsequent studies lead to more precise or more sharp determination of what kind of actions are necessary. I would pick out air systems again to say that one of the ways of effective resolution is to put out a

definitive document that identifies the problem. Then through workshops and meetings with industry and with owners groups get a constituency that believes and understands the problem and then works toward resolution individually in supporting generic letters that NRR would issue to effect a resolution.

Could I have the next slide, please.

[Slide.]

MR. JORDAN: This is a list of more recent examples of AEOD publications that led to generic letters. These are the compliance type of more rapid action items, although the first example is one that I don't think we would say was a rapid action. The issue of pressure locking, thermal binding of gate valves also evolved over the years and when we obtained sufficient instances and basis, then it has resulted in action, Generic Letter 95-07 is the action that will communicate that one to industry in a strong fashion. That one has a history of also industry in I would say the late '80s proposing to resolve but being unable to within their own resources. So it has required a great deal of action on the part of the NRC.

A much earlier issue that was instrumental in leading to a resolution would be the power oscillation in boiling water reactors. The LaSalle plant encountered instability and a review, a detailed review of that

particular matter, led subsequently to the bulletin 88-07 that has I believe created a reasonable resolution of that issue.

Could I have the next slide, please.

[Slide.]

MR. JORDAN: These are current reports on the range of generic problems. I would raise the reactor coolant system blowdown at Wolf Creek as an important issue. This was a specific followup that AEOD staff did to an event that seemed to be somewhat benign, but actually had some more serious consequences in that it was an event that both blew down the reactor, and also potentially would disable the safety systems, the ECCS, since the blowdown could have steam blanketed the suction line from the storage tank. We discussed that issue at the accident sequence precursor meeting last month with the Commission.

I would highlight the last item, the assessment of PBR reactor control rod drive mechanism and nozzle cracking. AEOD did an independent review of the activities associated with that problem and found that the activities that we were ongoing were appropriate. However, it was identified that the CE vessel nozzles had the same fabrication techniques and materials as some of the Westinghouse fabrication and, therefore, should be included in the inspection. So it broadened the opportunity to identify potential cracking.

Could I have the next slide, please.

[Slide.]

MR. JORDAN: AEOD has also instituted more management controls on both the development and studies of generic matters. For many years there were so many issues out there that it was a matter of picking sequentially. Now one needs to prioritize and pick very carefully from those issues that remain and, of course, have a means to reactively add items whenever appropriate. These are the current ongoing studies. System reliability studies we feel are quite important that we are able to now identify the relative reliability of the systems and compare them with PRA type values. So that work is continuing.

We have a survey of non-power reactors that we are about to complete, which is an area we had not examined previously. We also trend allocations to look for generic issues out of the allegation system in an independent fashion.

With that, I would, I think, end my presentation.

COMMISSIONER ROGERS: Just why is the emergency power source for Oconee a generic issue, what is generic about it?

MR. JORDAN: It is not really generic, and so that is a misstatement. The Oconee power source is a unique power arrangement with the Keowee Dam, and so it is unfair

to categorize it as generic. It is a study that we are doing as an independent review with regards to NRR's licensing.

MR. TAYLOR: That is a misnomer.

COMMISSIONER ROGERS: There is nothing generic about that. It seemed very special.

MR. TAYLOR: You are right, sir.

MR. JORDAN: There should be nothing generic about it.

COMMISSIONER ROGERS: Fine.

MR. JORDAN: Maybe I will make one comment about the materials area. One of the things we have done differently in the materials area is, after doing a review or study, because they are so different, we have developed some video training aids to send to sets of licensees, like the medical licensees or radiography licensees, since it is hard to identify generic issues and feedback in a bulletin or generic letter fashion. So there is a different treatment of that set of licensees.

Thank you.

MR. CRAIG: Could we have Slide 32, please.

[Slide.]

MR. CRAIG: As we prepared for the briefing and we went over the slides, and it became apparent that the current discussion that is publicly available of dealing

with and handling generic issues didn't cover the activities that are evolving within NRR nor the four different cuts that take place in NMSS, so we identified a couple of actions to be completed during the next year.

One of them is to revise the procedures that we have to reflect the integrated generic issue process so that the process steps and the decision criteria that are going to be used within NRR and with NMSS will be added to the discussion of the generic issue process that is utilized in RES, it is currently contained in 0933, so that there will be in one place a documented process for each one of the offices to show how the NRC deals with generic issues.

In addition to that, the information that is currently in 0933 is available on electronic database, and we want to update that information so that it can be searchable by standard review plan sections. That will make it much more usable by the regions, NRR technical staff, and RES technical staff as that applies to reactor facilities. That will be an improvement there, and that database, I believe, will also be available to the public.

So those are two actions that we think are appropriate to implement during the next year.

MR. TAYLOR: That concludes our presentation.

CHAIRMAN JACKSON: Okay. Let me ask you a couple of follow on questions. I think that you have tried to

address this already in the presentations, but how do the roles, again, of NRR, NMSS, and AEOD differ as far as evaluating operating experience goes?

MR. RUSSELL: The principal activity for NRR is to overview all of the information that could have a relationship to the safety of currently operating reactors. And so we conduct the screening on a real-time basis to try and glean out of that anything which would be of an immediate concern, or something which would be of a short-term compliance nature. Operating experience may also identify areas for potential new requirements that should be imposed through a process. Those are issues which are passed to research for formal prioritization.

The role of AEOD is one of what I would characterize as long-term evaluations of trends and patterns, not being involved in the day-to-day fire drills so that you can do a more thorough review of operating experience, and once they have completed those studies, they pass them back to NRR. We have been doing much better, I think, in the coordination between AEOD and NRR on areas for potential studies, what looks to be an area of concern that could use a more in-depth review, and there has been dialogue back and forth between the staffs and with Ed and I on the relative priorities and importance for studies as to how resources are going to be expended.

I would characterize that research activities ar generally ones of overall management of the generic issue program, plus focusing on issues which would be enhancements to requirements. It could be an added protection requirement, I mean, the PTS rule that was promulgated fell into that category, but generally they are enhancements to regulations under the backfit rule.

NRR is generally compliance-oriented, short-term, something need to be done, and NRR has the responsibility for developing the rationale as to why it is okay to continue operation in light of this generic compliance issue or continue licensing activities in light of the fact that there is an unresolved issue at this point in time.

CHAIRMAN JACKSON: Is there one central tracking system agency-wide relative to generic issues or is it separate in each office?

MR. RUSSELL: Not yet. That is the direction we are moving toward. We track the issues of a compliance nature within NRR. We have been doing that for some time. We are now getting to the point where we will be able to provide a feeder in the appropriate format so that it can go into 0933 and be promulgated. That is the whole approach to moving to an electronic data base to do that.

CHAIRMAN JACKSON: So who has responsibility for developing this central?

MR. RUSSELL: This central activity is the Office of Research.

CHAIRMAN JACKSON: This is agency-wide?

DR. SPEIS: Again, I would like to stress what Mr. Russell said, that 0933 has been focused primarily on safety enhancement issues, and it is the central repository of all the issues. So right now, NRR is developing criteria at what time or to introduce those issues into the 0933.

CHAIRMAN JACKSON: But 0933 captures, if I am understanding, part of the universe?

DR. SPEIS: Part of the universe, and mostly enhancements.

CHAIRMAN JACKSON: When I talk about a centralized tracking, I mean it has the different categories included.

MR. RUSSELL: Right now the two activities are separated, being managed individually within the offices, and what we are trying to do is, within the next year, get it to the point where they are centrally managed, tracked, and being reported.

CHAIRMAN JACKSON: That is what I wanted to get an answer to.

MR. RUSSELL: While NRR will be continuing to track the compliance activities, et cetera, we will provide a feeder to them that will then go out publicly and be available.

CHAIRMAN JACKSON: So all of it will be captured in one place that would include the compliance, include the enhancements, et cetera, but would also include relevant things from NMSS?

MR. RUSSELL: Yes.

CHAIRMAN JACKSON: And all of this is tracking to about a one-year timeframe?

MR. RUSSELL: That's correct. We want to revise the agency directive system and the relevant office letter to be consistent with that process, so that will take some time. I think that, from a practical standpoint, and important issue is being able to locate information within the database so that, as the panel is meeting and looking at new issues that are coming up, they can find whether that issue has come up before. So have characterized that the standard review plan approach is like the Dewey Decimal System of 0933 once we get there.

CHAIRMAN JACKSON: That shows your age, Bill.

[Laughter.]

MR. RUSSELL: But I want to have a mechanism where you can tie criteria and requirements which we have available in the format of the standard review plan, what is the criteria, what is the literal requirement, and how do you tie that to what has been your operating experience? So that is a development activity we want to start. We have it

available electronically. We have not yet developed it into a text relational database to be able to do that yet.

CHAIRMAN JACKSON: What has been the role -- you were going to have an addition?

MR. JORDAN: I just wanted to make sure that I wasn't committed to something that I didn't understand. AEOD currently identifies issues and we formalize them depending on their significance by a letter to Bill Russell or a letter to Brian Grimes, or a letter to Research that, here is our concern. In other cases, we may do a study that is relatively benign with regards to a recommendation. So our studies don't enter into the tracking system until they initiate a generic issue.

So, for instance, right now, 0933 does for those items that I listed plus others, have the reference to an AEOD report that formed a basis or a foundation for it, but our normal work products, until that happened, would not be in the tracking system.

MR. RUSSELL: But they do all come centrally to NRR and they are going to go through the panel process. If they have done a study and there are recommendations, if we have to staff that and look at potentially issuing a generic requirement, it will go into the process through the screening panel, get tracked, and at that point in time it will be going into 0933.

CHAIRMAN JACKSON: What has been the role of industry in the evaluation and resolution of generic issues?

MR. RUSSELL: This is an area where I think there can be some substantial improvement. We have had meeting where Mr. Taylor and I discussed this with industry. It is one of the reasons for making this information publicly early in the context of what are the potential compliance issues, generic issues we are working on because the circumstances have been in the past that if the staff studies an issue and does it in isolation, then the first time that you go out for public comment, you have a fully staffed issue with estimated costs, et cetera, the initial reaction is often one of, well, we don't agree that that is even an issue at all you need to work on. So then you start over.

So one of the objectives with identifying these issues in the reactor program early is to get the industry to focus on those as well. We have now had some meeting with NEI where we have looked at the priorities of the issues that they have, we have compared that to the information we have released publicly on the action plans an the generic communications and compliance activities. What we are trying to do is see what issues are going to be handled by NEI, which may be passed to an owners group because it only relates to a class of reactors or how they

are going to be managed.

My objective would be to get the industry to interact earlier and see if they can provide information that either puts the issue in context and says it is an issue or it is not, and if it is not, why, or if something needs to be done to get them to interact early, and propose alternatives that may be a more effective and efficient way of resolving the issue.

So this is one of the responses, I think, that is reasonable in light of Towers-Perrin and some of the past activities, we need to identify these issues earlier when they are in the developmental stage while we are resolving them rather than only going out for public comment at the point when we feel it is technically resolved and here is what needs to be done.

CHAIRMAN JACKSON: Right.

Commissioner Rogers, do you have questions?

COMMISSIONER ROGERS: Yes, a couple of questions and an observation. Do you have any records of how many urgent short-term and long-term issues surface each year of each of type and what the trends are on those?

MR. GRIMES: I think, in general, we seem to maintain a current inventory of about 60 issues, and we do issue on the order of I think this year it will probably be about 70 information notices from NRR. So I think you can

gauge from that that we generate and process about 70 of these items a year.

MR. RUSSELL: But as far as the rapid response, more significant issues, that would really relate to the number of cases where we have issued a bulletin or taken some other prompt action. I don't have the actual numbers, but based upon -- I would say it is a few, maybe two a year on average.

Generic letters, which generally have a longer timeframe, that is, it is one that you go through a public comment process, et cetera, and you have some time for development, that may be in the category of five or six a year on average. But the short turnaround, quickly respond does not happen that frequently. Some years you may have three, other years you may not have any. We can certainly provide that historical information to the Commission.

COMMISSIONER ROGERS: If it wouldn't be too much of a problem, I wouldn't make a big research project out of it, but if you have it handy, I would like it.

MR. RUSSELL: No, it is available electronically, I just don't have it at the table.

MR. GRIMES: Generic letter have been more in number recently partly because of line item improvements for improved standard technical specifications, for example.

MR. RUSSELL: You are not interested in areas

where we have communicated to provide vehicles for relief, you are interested in where we have had to take action based on operating experience feedback, and we can give you that relatively quickly.

COMMISSIONER ROGERS: Right. The observation that occurs to me here is that there seems to be a big difference between NMSS's approach and everything else. That may be partly or largely historical, and it may be just by the nature of the business. But it does seem to me that maybe things could be a little bit more common. In particular, I am a bit concerned to hear that research doesn't get into these weekly meetings or monthly meetings, or so. I think that may be that they don't find that they can contribute, I don't know. Have you tried it, has research tried to sit in on those and see over a period of time whether there is something useful coming out from their point of view that tells them some things that they ought to be thinking about?

DR. PAPERIELLO: I will invite them. I have thought about this as we are talking here, and I don't see in many of my programs the amount of activity and research participation that exists on the reactor side, being familiar with both sides. I see NMSS as, in some ways, again, probably for historical reasons, far more centralized, in one sense, in its programs. In other words, there has not been the kind of AEOD activity and materials

that there has been on the reactor side until relatively recently, I mean in a couple of years when the database, the more formal database, was developed, and there are many areas in NMSS where research programs are actually being conducted by NMSS, not by research.

For example, one was the conversion of tritium gas to water in devices. Much of the work on medical devices in terms of PRA applications to a high-dose rate brachytherapy and teletherapy were all research contracts that NMSS had, and NMSS project managers followed, not in research. Again, I don't know how we got there, but that was the as-found situation.

So we have been a lot in isolation.

CHAIRMAN JACKSON: My impression is that Commissioner Rogers is, perhaps, making a suggestion to you.

DR. PAPERIELLO: Yes.

COMMISSIONER ROGERS: He suddenly got it.

DR. SPEIS: If I may say something, being from the Office of Research, we will work with NMSS, especially if NMSS thinks that it is time to develop some time type of prioritization process or scheme, and work with them to discuss or give them the lessons learned in developing the process that we have in place for reactor related issues. So we will followup and see if we can help based on the expertise and the insights that we have gained.

COMMISSIONER ROGERS: And you might learn something from being there.

DR. SPEIS: We will follow this up.

COMMISSIONER ROGERS: Thank you.

CHAIRMAN JACKSON: I think that that kind of an issue, suggestion, points up something in terms of approaches that can help to enhance consistency and optimal use of resources within the agency.

I would like to thank you for briefing the Commission, and I think it is important for our licensees and for the public to understand how generic safety issues are identified and resolved by the NRC.

Since all of the NRC's major offices are involved in this activity, and this is essentially reinforcing the line that you have been hearing through the briefing, it is important that their respective roles are clearly understood, but that efforts within each office are coordinated with other offices as appropriate, that duplication of effort is eliminated, and that processes are established to address generic safety issues agency-wide are as consistent as possible and effective.

It strikes me that one potential element relates to, in addition to what you have already begun to put into place, the centralized tracking. An improvement, I know, to the processes for addressing generic issues are being

explored within the strategic assessment and rebaseling, and I look forward to the conclusion of that effort.

Although the NRC must conduct an independent assessment of a potential generic safety issue, I do believe there could be great value in resolving generic issues in a timely manner by obtaining, as Mr. Russell indicated you want to do, industry participation in evaluating the issue at an early stage.

Although the reactor industry is a mature one, and materials is ever evolving, and in the reactor area some might feel that the identification of generic safety issues is expected to decline, there are other factors which may contribute to the identification of generic issues such as ones related to aging reactors as well as the introduction of new technologies. So it is important that the NRC continue to be vigilant in your efforts to identify and resolve generic safety issues, and to work with industry in doing so.

If you don't have any further comments, this meeting is adjourned.

COMMISSIONER ROGERS: Thank you very much.

[Whereupon, at 11:49 a.m., the meeting was concluded.]

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 MANAGING GENERIC ISSUES - PUBLIC MEETING

PLACE OF MEETING: Rockville, Maryland

DATE OF MEETING: Tuesday, December 19, 1995

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: Christopher Cuterall

Reporter: Mark Mahoney

COMMISSION BRIEFING

MANAGING GENERIC ISSUES

DECEMBER 19, 1995

AGENDA

- Introduction - (NRR)
- NRC Generic Safety Issues program (RES)
- NRR's generic activities program (NRR)
- NMSS' generic activities program (NMSS)
- AEOD's generic activities program (AEOD)
- Conclusions and agency follow-up actions (RES)

SOURCES OF INFORMATION

- Operating experience - U.S. & foreign
- Technical reviews & inspection findings
- Research results
- NRC staff
- ACRS
- Industry - licensees, INPO, owners groups, vendor reports
- Public - 2.206, allegations

OFFICE RESPONSIBILITIES RELATED TO GENERIC ISSUES

- NRR - Short-term, reactor-related issues - usually compliance, implement short term actions, evaluation of daily operational events, weekly events analysis - categorization
- RES - Long-term Generic Issues - primarily safety enhancements, NRC repository for Generic Issues, prioritization and resolution of Generic Issues
- NMSS - Operating experience evaluation and follow-up of medical, health physics, fuel, and waste
- AEOD - Collects, reviews and evaluates operating experience, develops trends and pattern analyses for issues of generic nature

OUTLINE OF PROGRAM OVERVIEW (RES)

- Introduction - Definition of Generic Issues
- Classification of Generic Issues
  - Safety and non-safety
- Historical basis for action on Generic Issues
- Generic Issue process
  - Identification, prioritization, resolution, imposition, implementation, verification

INTRODUCTION

- **Definition of Generic Concern:**
  - **Concerns involving engineering, materials, systems, or severe accidents, which are applicable to all, several or a class of licensees or licensee-related facilities.**

CLASSIFICATION OF ISSUES

- **Safety: Generic Safety Issue (GSI)**
  - **A safety concern that may affect the design, construction, operation or decommissioning of all, several, or a class of reactors or facilities, and may require improvements or new requirements/guidance.**

HISTORICAL BASIS FOR ACTION ON GENERIC ISSUES

1976 - Section 210, Energy Reorganization Act of 1974, as amended (PL 95-209)

1978 - Commission established Generic Issue program
- Policy Statement

First compilation of 142 issues, NUREG-0410
- Task Action Plan items, A, B, C, D

1980 - List expanded with 369 TMI Action Plan items

1981 - Risk/cost evaluations used for first time to set priorities for 511 issues

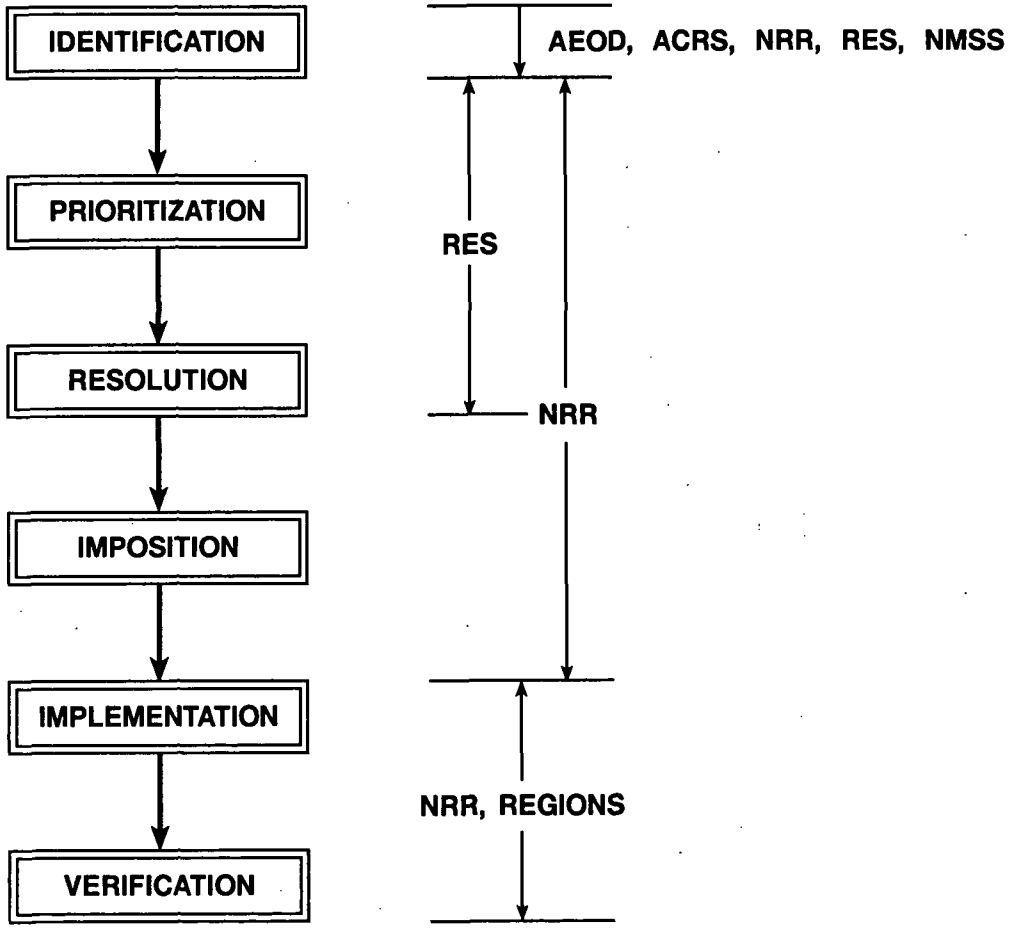
1983 - Commission approved value/impact prioritization method; NUREG-0933

1985 - 27 human factors issues added

1989 - 32 issues based on Chernobyl added

1995 - 250 other "new" issues added to list since 1981 making a total of 820 issues

THE GENERIC ISSUE PROCESS



- **IDENTIFICATION**

  - Generic concerns most often are identified from staff evaluation of operating experience, and reanalysis of operations, systems or procedures.

  - Generic concerns may also be identified by individuals or organizations within the NRC staff, the ACRS, the nuclear power industry, the public, allegations, from research programs, or staff review of topical reports and IPE's

- **PRIORITIZATION**

  - Engineering and quantitative assessment of safety benefits (decrease in risk due to resolution) and NRC and industry impacts (cost to implement)

  - Priority ranking from public risk reduction potential, impact/value ratio, license renewal period of 20 years, and other considerations: high, medium, low, drop

  - Publish in NUREG-0933, "A Prioritization of Generic Safety Issues;" tracking in Generic Issue Management Control System (GIMCS)

- **RESOLUTION**
  - NRC Task Action Plan, analyses, experiments, etc.
  - Development of proposed resolution; regulatory analysis (alternatives, value/impact)
  - Preparation and approval of resolution package (rule, Reg. Guide, no action)
- **IMPOSITION**
  - Issuance of action document
- **IMPLEMENTATION**
  - Licensee actions to take appropriate action
- **VERIFICATION**
  - NRR/Regions inspect to assure actions correctly being done

NRR ROLE IN THE GENERIC ISSUE PROGRAM

- Compliance issues
- Evaluate daily operational experience
  - Events, allegations, Part 21 reports, etc.
- Immediate and short-term action
- New Process:
  - Centralized screening and structured prioritization
  - Designated task manager
  - Control and tracking of generic activities
  - Systematic documentation of regulatory assessment
  - Publicly available information
  - Coordination of activities between offices
  - Measurement of program success

NRR SHORT-TERM GENERIC ISSUES PROCESS

Typically generic compliance issues

Past

- Multiple sources had been screened for potentially generic information by different NRR processes.
- Effective project management for plant specific issues, but less effective management for issues affecting more than one plant.

Present:

- Integrated single process created for identification, evaluation, prioritization, management, and resolution of short-term generic compliance issues.
- Recent NRR reorganization centralizes short-term generic compliance issue project management in one division.

IDENTIFICATION AND MANAGEMENT

- All staff continue to be responsible for identifying safety issues.
- Source data are centrally screened and stored; identified issues are prioritized, and project managed.
- Multi-discipline review of source data (Daily AEOD/NRR conference call and weekly NRR/ AEOD/RES Events Assessment Panel).
- Urgent, immediate action v. short-term issues

URGENT V. SHORT-TERM ISSUES

Urgent

- Immediate action before Panel consideration
- Action requires compliance licensee action
- Information Notice followed by Bulletin when appropriate

Short-term (bases for continued operation)

- Issue requires time for evaluation
- Panel reviews and proposes regulatory action, NRR priority, and time frame for completion
- Regulatory assessment for interim until resolution
  - Justification for proposed NRR priority, action type and resources documented (i.e. why planned regulatory action is adequate)

NRR PRIORITY DETERMINATION

- Panel decision making process (weekly)
  - Panel charter
  - Membership (PECB, SPSB, HHFB, RES, AEOD)
  - Technical resources (Tech. Branches, PMs, RGNs)
- Panel considerations (# of plants, risk, past, etc.)
- Potential responses
  - Already resolved by past action
  - Kept in database for future, no action required now
  - Short-term action
  - Action involving potential enhancement
  - Referral to RES as potential GSI
  - Orders, bulletins, generic letters, information notices, inspection guidance

MANAGEMENT AND TRACKING

- Task manager (usually within the Events Assessment and Generic Communications Branch) identified for each issue
- Action plans developed for issues needing more than 800 staff hours or one year to resolve
- Internal monthly reports issued for action plans, rulemaking, and other generic communication and compliance issues.
  - Published publicly quarterly
- Performance measures
- Monthly executive review by the NRR Office Director

RESOLUTION AND DOCUMENTATION

- Integrated documentation strategy and structure
  - NRR Action Plans
  - Rulemakings and guidance
  - Generic Communication and Compliance Activities (GCCAs)

- Common text-searchable database to provide quick access and minimize duplication of past effort

- NUREG-0933, "A Prioritization of Generic Safety Issues," established publicly available document

PLANNED FUTURE ACTIVITIES

- Continue to issue periodically a public version of the NRR action plan and Generic Communications and Compliance Activities (GCCA) reports
- Issue final NRR office letters
- Conduct staff training
- Develop additional management tools including performance measures

PERFORMANCE MEASURES

- Effectiveness of NRR resolution activities:
  - Task Action Plans (TAPS)
  - Generic Communications and Compliance Activities (GCCAs)

- Characteristics
  - Number of items
  - Age of items
  - Priority of items
  - Resources expended

NMSS EVENT REVIEW AND FOLLOW-UP

- Events screened by cognizant staff for significant issues.
  - industrial and medical events (IMNS)
  - fuel cycle and safeguards events (FCSS)
  - waste management and decommissioning events (DWM)
  - transportation and spent fuel events (SFPO)

- Follow-up of all events by regional inspection staff.
  - Medical Misadministration Coordinator (in NMSS)
  - AEOD Nuclear Materials Events Database

- Since 1987, monthly NMSS Director Operational Event Briefings have been conducted to review and discuss the most significant events.

- Follow-up of significant issues by NMSS staff and AEOD.

NMSS EVENT REVIEW AND FOLLOW-UP

- Findings of 1994 Event Review Task Group
  - Material event review less formal than reactor event review.
  - Lack of uniformity in reviewing Agreement State events.
  - Effectiveness of materials program limited by resources.

- NMSS is planning to improve its capability through the formation of a Regional Coordination and Events Section

NMSS EVENT REVIEW AND FOLLOW-UP

- Since 1980, NMSS has issued approximately 180 event-related generic communications (mostly information notices) on a wide range of topics. Examples include --
  - Bulletin 91-01 after the criticality incident at General Electric (Wilmington, NC).
  - Bulletins 92-03 and 93-01 after the brachytherapy incident at Oncology Services Corporation (Indiana, PA).
  - Information Notices 92-62 and 93-07 after the fresh fuel transportation accident in Springfield, MA.
  - Information Notice 95-51 after the internal contamination incidents at NIH and MIT.

- Since 1988, NMSS has issued a quarterly newsletter to all of its licensees containing information about events, enforcement actions, and other items of regulatory concern.

OFFICE FOR ANALYSIS AND EVALUATION OF OPERATIONAL DATA

- Established by Commission in 1979
- Formed as partial response to lessons learned from TMI accident
- Independent analysis and evaluation of operational safety data
- Communicate lessons of experience to industry and NRC
- Primary NRC responsibility for long term review of operational experience
- All NRC-licensed activities

MAJOR AEOD PRODUCTS

- Sequence Coding and Search System database
- Common-cause failure database
- Nuclear material events database
- Accident Sequence Precursor reports
- System reliability reports
- Performance Indicator reports
- In-depth component, systems, human performance, repetitive problem study reports

FORMAL GENERIC ISSUES INITIATED BY AEOD REPORTS

- Over 25 new issues initiated in the past 15 years

- Examples
  - Safety valve reliability
    AEOD/S92-02 — GI 165
  - MOV operator problems
    AEOD/C603 — GI 54
  - Service water system degradation
    AEOD/EO16, C105 — GI 32, 36
  - Air systems
    AEOD/E123 — GI 43

AEOD REPORTS CONTRIBUTING TO RESOLUTION OF GENERIC ISSUES

- Reports supported resolutions of over 15 issues

- Examples
  - Diesel generator failures

AEOD/S91-01	GI B-56	

  - Service water systems

AEOD/C801	GI 51	GL 89-13

  - Steam binding of auxiliary feedwater pumps

AEOD/C404	GI 93	GL 88-03

  - Air systems

AEOD/C701	GI 43	GL 88-14

AEOD REPORTS ON GENERIC PROBLEMS

- Examples
  - Pressure locking of gate valves

    AEOD/S92-07 — GL 95-07
  - Solenoid operated valves

    AEOD/C90-01 — GL 91-15
  - Loss of decay heat removal

    AEOD/C503 — GL 88-17
  - Power oscillations in Boiling Water Reactors

    AEOD/S803 — BULLETIN 88-07

RECENT REPORTS ON GENERIC PROBLEMS

- **Examples**

– Turbine-generator overspeed protection systems at U.S. Light Water Reactors	AEOD/S94-01
– Reactor coolant system blowdown at Wolf Creek on September 17, 1994	AEOD/S95-01
– Potential damage to low-pressure injection valves during surveillance testing	AEOD/T95-02
– Assessment of PWR reactor control rod drive mechanism nozzle cracking	NUREG/CR6245

ONGOING GENERIC STUDIES

- Examples
  - System reliability studies
  - Efficacy of anticipated transient without scram (ATWS) modifications
  - Effectiveness of testing programs
  - Survey of non-power reactors
  - Economic impact on safety
  - Trends in allegations
  - Evaluation of emergency power source for Oconee

CONCLUSIONS

- Actions to be completed during the next year
  - Revise procedures to reflect integrated generic issue process:
    - Process steps
    - Decision criteria
  - Update the current NUREG 0933 electronic data base that currently includes information such as discussion of issue, resolution and implementation to be searchable by Standard Review Plan (SRP) section