UNITED STATES

NUCLEAR REGULATORY COMMISSION

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BRIEFING ON RESULTS OF THE AGENCY ACTION REVIEW

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THURSDAY,

JUNE 15, 2017

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ROCKVILLE, MARYLAND

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The Commission met in the Commissioners' Hearing Room at the Nuclear Regulatory Commission, One White Flint North, 11555 Rockville Pike, at 9:04 a.m., Kristine L. Svinicki, Chairman, presiding.

COMMISSION MEMBERS:

KRISTINE L. SVINICKI, Chairman

JEFF BARAN, Commissioner

STEPHEN G. BURNS, Commissioner

ALSO PRESENT:

ANNETTE VIETTI-COOK, Secretary of the Commission

MARGARET DOANE, General Counsel

NRC STAFF:

VICTOR MCCREE, Executive Director for Operations

DANIEL DORMAN, Regional Administrator, Region I

CATHERINE HANEY, Regional Administrator, Region II

KRISS KENNEDY, Regional Administrator, Region IV

CHRIS MILLER, Director, Division of Inspection and Regional Support

SCOTT MOORE, Deputy Director, Office of Nuclear Material Safety

INDUSTRY MEMBERS PRESENT:

MIKE ANNACONE, Site Vice President, Columbia Fuel Fabrication Facility, Westinghouse Electric Company

RICH ANDERSON, Site Vice President, Arkansas Nuclear One, Entergy Nuclear

CHRISTOPHER BAKKEN, Executive Vice President of Nuclear Operations and Chief Nuclear Officer, Entergy Nuclear

CHRIS COSTANZO, Chief Operating Officer, North, Entergy Nuclear

LARRY COYLE, Chief Operating Officer, West, Entergy Nuclear

MICHELE DEWITT, Senior Vice President, Nuclear Fuel Organization, Westinghouse Electric Company

BRIAN SULLIVAN, Site Vice President, Pilgrim Nuclear Plant, Entergy Nuclear

DOUG WEAVER, Vice President, Nuclear Regulatory Affairs, Westinghouse Electric Company

P R O C E E D I N G S

9:04 a.m.

CHAIRMAN SVINICKI: Well, good morning everyone. I call the meeting order.

This morning, we meet to provide the Commission with a discussion of the results of the Agency Action Review Meeting and to hear from licensees on action plans.

It's a rather full morning. I will propose that we just get right to the presentations.

But, first, I will ask if my colleagues have any opening comments?

(NO RESPONSE.)

CHAIRMAN SVINICKI: Okay. If not, then, we will begin with NRC staff presentation.

Then I turn over the floor to our Executive Director for Operations, Victor McCree.

Good morning.

MR. MCCREE: Good morning, Chairman, how are you?

CHAIRMAN SVINICKI: Good morning.

MR. MCCREE: Morning, Commissioner Baran, Commissioner Burns.

Today, we're here to discuss the results of this year's Agency Action Review Meeting that we conducted on May 4th.

As a reminder, the Agency Action Review Meeting provides

an opportunity for senior NRC leadership to review the performance of both our licensees and the NRC's oversight processes.

This meeting is a key part of the approach we use to oversee licensee safety performance and fulfill our safety and security mission.

Next slide, please?

The first objective of the Agency Action Review Meeting is to review the appropriateness of Agency actions taken for power reactor plants, power reactor plants under construction as well as nuclear material licensees with significance performance issues and to ensure that coordinated courses of action are developed and implemented for licensees with performance issues.

The second objective focuses on the results of our annual review of the nuclear materials and waste program and our annual assessment of the effectiveness of the reactor oversight process and the construction reactor oversight process, including a review of all approve deviations from the action matrix or the construction action matrix.

Next slide, please?

As you can see from the agenda, we'll touch on each of the topics I just mentioned. But, before I turn it over to the other speakers, I would like to highlight the results of the annual construction reactor oversight process self-assessment which was discussed at the Agency Action Review Meeting in May.

In the interest of time, and because we will discuss the construction assessment in more detail during the New Reactors Business

Line Commission Meeting this fall, we will not present this topic in detail today.

The results of the annual construction reactor oversight process self-assessment showed that no failures, or excuse me, no facilities met the criteria to be discussed at the Agency Action Review Meeting since the Vogtle and Summer units under construction, the AP1000 units under construction were in the licensee response column of the NRC's construction action matrix.

The construction reactor oversight process self-assessment process itself was implemented following the principles of good regulation.

And, we also concluded that the process has been effective in ensuring the new reactor units are being constructed in accordance with the approved design.

I'd also like to highlight that we have taken proactive steps to be ready for the surge in the Inspections, Test, Analyses, and Acceptance Criteria, or ITAAC, that will occur later in construction.

As part of this effort, we held a public workshop with the industry on April 24th and across qualified additional ITAAC reviewers in the Office of New Reactors to make sure we have sufficient resources to handle the expected surge in ITAAC.

Now, let me turn it over to Dan Dorman and he'll discuss the performance of the Pilgrim Nuclear Power Station.

Dan?

MR. DORMAN: Thank you, Vic.

Good morning, Chairman Svinicki, Commissioners.

This morning I will briefly describe the staff's assessment of safety performance at the Pilgrim Nuclear Power Station, the results of the staff's diagnostic inspection of the causes of Pilgrim's performance decline, the NRC's oversight response and the areas of focus for the station's recovery.

Next slide, please?

During calendar year 2016, the NRC staff conducted over 12,000 hours of inspection at Pilgrim. We assessed that Pilgrim continues to operate with adequate safety margins.

Of particular note, our observations of licensed operators, both in the control room and in the simulator provides assurance that when confronted with an off normal condition in the plant, they will take appropriate actions to put the plant in a safe condition.

In addition, the mitigating system performance indicators which reflect the reliability and availability of the most important safety equipment show considerable margin from the green to white threshold.

Notwithstanding these observations, Pilgrim remains in the repetitive degraded cornerstone column of the reactor oversight process action matrix until Entergy can demonstrate sustained performance improvement.

Entergy has conducted an extensive review of the problem areas and associated causal factors behind their performance decline.

The NRC has conducted a diagnostic inspection under Inspection Procedure 95003 to establish our own independent evaluation of the causes of Pilgrim's declining performance and to ensure that Entergy is

taking appropriate actions to achieve sustained performance improvement.

Based on our inspection results, Entergy is revising their recovery plan and I expect to issue a confirmatory action letter in the coming weeks to document their commitments and establish our oversight plan going forward.

In the meantime, consistent with the reactor oversight process, we will continue to maintain enhanced oversight of operations at Pilgrim.

Next slide, please?

In late 2013, Pilgrim entered the degraded cornerstone column or column 3 of the action matrix due to a series of unplanned scrams, several with complications.

In late 2014, the NRC conducted a supplemental inspection under Procedure 95002 in which we concluded that Entergy's evaluation of the root causes and identification of corrective actions were not sufficient to fulfill the objectives of the inspection and, therefore, Pilgrim remained in the degraded cornerstone column for greater than five calendar quarters.

Subsequently, during an unplanned scram in January 2015, a safety relief valve failed to open on demand resulting in a finding of low to moderate safety significance.

This additional white input to the action matrix led us to place Pilgrim in the repetitive degraded cornerstone column in September of 2015.

Next slide, please?

During the first quarter of this year, we completed the 95003 inspection at Pilgrim. This inspection team included more than 20 inspectors from all four Regions and two Headquarters offices, most of whom had no prior involvement in the oversight of Pilgrim.

The team conducted its preparation and inspection work over several months, including three weeks at the station.

The inspectors concluded that the Entergy recovery plan generally addressed the right problem areas that contributed to the station's performance decline and that Entergy generally identified the right causes of those problem areas.

Specifically, Entergy identified three fundamental problem areas that most substantially contributed to their declining performance. These were corrective action program implementation, risk recognition and decision making and safety culture.

The team found that Entergy's planned and completed corrective actions for these areas were not always well linked to the stated causes and that they lacked the focus and depth to provide assurance that, if effectively implemented, they would bring about the necessary sustained performance improvement.

Next slide, please?

For 10 out of the 11 cause evaluations, Entergy identified leadership weaknesses as a key causal factor of declining performance.

In particular, Entergy concluded that station leadership failed to establish, communicate and enforce appropriate expectations and

standards to the station staff.

The NRC's inspection team found that this, in turn, contributed to a lack of rigor by control room shift managers in assessing and correcting degraded conditions at the plant.

Although the operators demonstrate the knowledge and ability to place the plant in the safe condition when needed, they were too accepting of easy answers and operability determinations and corrective action documents and did not hold other organizations at the station to a high standard in protecting the safety margins inherent in the licensing and design bases of the station.

This lack of rigor contributed to Entergy's failure to identify and correct a failed safety relief valve in 2013 resulting in a repeat failure in 2015 that contributed to their placement in column 4.

The NRC inspection team concluded that Entergy's evaluation of these events failed to note the weakness and operations review as a key causal factor. Entergy will address this in their revised recovery plan.

Next slide, please?

Entergy identified safety culture as a fundamental problem area. The NRC inspection team did note incremental improvement in safety culture at the station, particularly in the ability of station personnel to articulate the key elements of a positive safety culture.

However, during field observations, the team noted that the station staff behaviors did not always comport with what station personnel

articulated in interviews and focus group discussions.

For example, the operation shift reviews that I already mentioned did not demonstrate the attribute of a questioning attitude.

The weaknesses in correction action program implementation do not demonstrate the attribute of problem identification and resolution.

And, the team also found weaknesses in effective planning and control of work.

Of note, the team did not identify a weakness in the area of safety conscious work environment or the willingness of station personnel to identify and raise safety concerns.

Entergy's corrective actions for the safety culture weaknesses were focused on leadership safety values and actions with an expectation that this would create a trickle-down effect to the Pilgrim staff.

The NRC team concluded that the actions taken and planned were too narrowly focused and of too short duration to bring about the change needed to produce sustained performance improvement through the station. This is an area for further adjustment in Entergy's recovery plan.

Next slide, please?

Overall, the inspection team identified 11 findings, 4 of which were in the area of operations and engineering. One of those involved a modification to the station's emergency diesel generators which was implemented in 2000 and 2002.

And, the modification introduced a new failure mechanism

which was not adequately evaluated or addressed in the station's maintenance and surveillance programs resulting in a valve failure which caused a loss of lubricating oil to a gear box and the apparent inoperability of one emergency diesel generator for longer than is allowed by the Pilgrim technical specifications.

This issue has been preliminarily characterized as greater than green pending additional information from Entergy regarding both the cause and the impact of the failure.

In addition, the team identified seven findings related to correction actions.

Next slide, please.

Based on the results of the 95003 inspection, we have identified several areas that require additional Entergy focus in revising their recovery plan.

These include enhancing the corrective actions to preclude repetition for the fundamental problem areas they identified, especially for the corrective action program implementation, strengthening the standards for assessing and correcting degraded conditions of particular focus on the role of operations department leadership.

And, ensuring that improvements in safety culture penetrate throughout the organization and are sustained.

Next slide, please?

Since the inspection team exited in March, several events at Pilgrim have reinforced the observations of the team.

In late March, while conducting surveillance testing on

temperature switches in the reactor core isolation cooling system, technicians inadvertently tested a switch in the wrong system causing an isolation of the high pressure coolant injection system.

Several days later, while restoring a system line up following a system flush in preparation for the refueling outage, operators did not follow the correct valve sequence and created a flow path from the condensate storage tank to the Torus resulting in a Torus high level alarm.

During the follow up review of the Torus event, operators did not identify anomalous indications between channels of the Torus level instruments.

These events indicate continuing gaps in the station safety culture behaviors regarding questioning attitude and personal accountability, the need for greater discipline and procedure use and adherence, and the need for operations to demonstrate ownership and rigor in assessing and correcting degraded conditions in the plant.

Next slide, please?

We have evaluated the 95003 inspection team findings and observations in concert with other oversight outcomes related to Pilgrim's performance.

In particular, we reviewed Inspection Manual Chapter 0305 which contains several examples of unacceptable performance, warranting movement to column 5 and a directed plant shutdown.

With respect to those examples, we found that there is not a history of escalated enforcement actions. In addition, there are not safety

significant events or findings which call into question the licensee's ability to operate the facility within its licensing and design bases.

Neither is there a pattern of failure to effectively address previous safety significant findings or performance indicators.

As a result, we concluded that Pilgrim will remain safe to operate, that the plant should remain in column 4 until sustained performance improvement is demonstrated and that the NRC's oversight actions for a station in column 4 are appropriate in light of Pilgrim's performance.

Specifically, in accordance with the program requirements for a plant in column 4, we continuously evaluate station performance and conduct focused performance reviews on a quarterly basis.

In addition, we will retain an additional resident inspector at the station in the coming months and when the confirmatory action letter has been issued, we will begin periodic inspections to confirm Entergy's progress in implementing their commitments in a manner that results in sustained performance improvement.

Next slide, please?

Entergy is revising their recovery plan to address the results of the 95003 inspection. We actually got access to their revised plan earlier this week and our staff are reviewing the plan and, as I said earlier, I expect to issue a confirmatory action letter in the coming weeks to confirm those commitments that the staff concludes will result if effectively implemented in sustained performance improvement warranting removal of Pilgrim from column 4 and the associated level of oversight.

After issuance of this letter, we will begin periodic inspections to verify the implementation of those commitments and to assess their effectiveness.

Our enhanced oversight will continue until we are able to verify that the committed actions have been effectively implemented resulting in sustained improvement in the station safety performance warranting return to a normal level of NRC oversight.

This concludes my remarks on Pilgrim and I'll turn it over to Kriss Kennedy to discuss Arkansas Nuclear One.

MR. KENNEDY: Thanks, Dan.

Good morning, Chairman and Commissioners.

During my presentation, I will provide you with an update on Entergy's progress in improving safety performance at Arkansas Nuclear One.

Next slide, please?

Arkansas Nuclear One Units 1 and 2 continue to be operated safely. In 2016, we conducted over 10,000 hours of inspection at the site and all but one of our inspection findings were green. And, I'll touch on that one white finding later in the presentation.

Based on the results of our 95003 inspection last year and our ongoing inspection activities, we continue to assess that the ANO Comprehensive Recovery Plan is sufficient to address the causes for the decline in safety performance.

Entergy has committed resources and enhanced oversight to support conduct of the daily work and implement the improvement actions

according to the schedule committed to the NRC by Entergy.

At the request of the licensee, we approved an extension to the completion date of one category of the confirmatory action letter when they identified additional actions needed to be completed in the category of safety culture.

Having completed four inspections of confirmatory action letter actions reported by the licensee as complete and effective, we have noted improvements in licensee performance.

We will continue with our increased level of regulatory oversight through the conduct of our periodic confirmatory action letter inspections.

Next slide, please?

As a reminder, ANO Units 1 and 2 transitioned to column 4 in March of 2015 as a result of having one yellow finding in the initiating events cornerstone for each unit involving the failure to adequately approve the design and to load test a temporary lift assembly, and one yellow finding in the mitigating systems cornerstone in each unit involving the failure to design, construct and maintain plant design features to protect safety-related equipment from the effects of flooding.

During this period, Unit 2 also exceeded the green-white threshold for unplanned scrams for the second and third quarters of 2014.

Next slide, please?

Since last year's Commission meeting, we completed our review of Arkansas Nuclear One's Comprehensive Recovery Plan, issued a

confirmatory action letter documenting Entergy's commitments to actions to improve performance at Arkansas Nuclear One and have conducted four inspections of the licensee's progress in completing commitments in the confirmation action letter and addressing performance issues at the site.

Next slide, please?

Following completion of Part 95003 inspection, Entergy submitted the ANO Comprehensive Recovery Plan to the NRC.

The Comprehensive Recovery Plan included specific actions to resolve the causes for the declining performance at ANO.

In June 2016, we issued a confirmatory action letter which confirmed Entergy's commitments to take 161 specific actions included in the Comprehensive Recovery Plan.

The confirmatory action letter groups these actions in the six categories shown on this slide. We expect all actions in the confirmatory action letter to be completed by June of 2018.

Next slide, please?

We began conducting quarterly follow up inspections in August of 2016 to review licensee progress in completing actions in the Comprehensive Recovery Plan as specified in the confirmatory action letter.

So, the information on this slide shows that ANO has made significant effort toward an improvement, indicating that a majority of the plant improvement actions have been completed.

This does not mean that all actions are ready for inspection, as the licensee has to determine the effectiveness of the actions before they

deem it ready for inspection.

We recently completed our fourth confirmatory action letter follow up inspection and the results on this slide show that we have been able to close about 83 percent of the actions we inspected.

For those actions that we were not able to close, we found examples where the licensee did not complete the full scope of the stated action and actions that were completed but did not achieve the stated objective.

The licensee has recently taken actions to develop effectiveness measures for actions that they have completed.

ANO leadership committed to revise how they are assessing effectiveness and to develop tools to better monitor progress.

This will include reassessing effectiveness for all actions shown as completed.

Next slide, please?

Based on our inspections today, we have noticed some improvements in performance at the site. The site-wide emphasis on safe plant operations is much more visible.

Nuclear safety is at the forefront of communications onsite, workers better understand their role in assessing and managing risk and have shown improvement in identifying and reporting plant problems.

Leaders are more challenging at meetings, identifying assumptions and requiring that they be validated.

Facilitative leadership styles are also being used more

consistently.

We've seen improvements in conservative decision making. Decision making is much more methodical and decision makers consider the risk associated with activities, identify actions to mitigate the risks and develop contingency plans in advance of plant activities.

We've also seen significant improvements in outage performance in the planning and execution of plant outages.

The work scope has been increased to reduce the backlog of equipment reliability issues, scheduled work is completed as planned and new issues discovered during an outage are being addressed properly and promptly.

Next slide, please?

We've also seen improvements in the implementation in the licensee's corrective action program.

The quality of cause evaluations have improved considerably and corrective actions are more thorough.

ANO has also reduced their maintenance and engineering backlogs. They've reduced backlogs in the areas of maintenance, procedure change requests, engineering documentation and corrective actions.

We've also seen improvements in the licensee's oversight of vendors and contractors.

We've also observed increased resource commitments to improve equipment reliability at the site.

Next slide, please?

Several areas continue to warrant additional attention by the licensee. In particular, ANO safety cultures have shown modest improvements at the site.

Quarterly safety culture surveys indicate that the station workforce sees limited improvement in the targeted behaviors defined in the Safety Culture Improvement Plan.

Alignment amongst station leaders has improved, but some leadership improvement items have not been fully implemented at the first and second line supervisor level.

Station leadership has not fully engaged the workforce in the improvement effort. The licensee has made some recent changes to address this, but it is too early to assess the effectiveness of those changes.

In the area of work management processes, these processes have demonstrated inconsistent performance due to challenges in resources and teamwork.

While teamwork and the work management process has improved, the workload continues to exceed the staffing resources needed to accomplish the work that has been scheduled.

Emergent workload remains relatively high, causing some planned maintenance to be rescheduled.

We've also seen that preventable human performance errors continue to occur at the site.

Preventable human errors continue to occur in maintenance and operations, though the licensee has made some adjustments and started

working with the union, the International Brotherhood of Electrical Workers, to improve performance in this area.

Next slide, please?

In February 2017, I issued the final significance determination for the licensee's failure to provide adequate lubrication for emergency diesel generator alpha in Unit 2, resulting in a failure of that system in September of last year.

We concluded that the finding was of low to moderate safety significance or white. In addition to our reactor oversight process baseline inspections, we will conduct a supplemental inspection to verify that the licensee has implemented appropriate corrective actions to prevent recurrence of this issue.

My team reviewed this finding and its causal factors in context with the performance issues that contributed to ANO being placed in column 4 of the action matrix and concluded that continued oversight in column 4 remains appropriate.

Of note, the conditions that allowed this failure occurred in 2014, prior to ANO being placed in column 4.

Next slide, please?

This slide summarizes our next steps. In addition to our implementation of the baseline inspection program, we will continue to perform our inspections of Arkansas Nuclear One's progress in completing the actions committed to in the confirmatory action letter, including an assessment of the effectiveness of those actions and improving performance.

We expect to conduct a supplemental inspection for the white emergency diesel generator finding late in the third quarter or fourth quarter of this year.

That concludes my briefing and I look forward to your questions.

I will now turn it over to Cathy Haney.

MS. HANEY: Good morning, Chairman and Commissioners.

This morning, I will describe the staff's actions after learning of an accumulation of uranium in the S1030 scrubber at the Westinghouse Columbia Fuel Facility, hereafter referred to as Westinghouse.

This event is being discussed because it met the requirements for inclusion in the abnormal occurrence report to Congress and required additional NRC oversight.

During this presentation, I will describe the event and NRC's near-term actions, the licensee's immediate and long-term actions, and lastly, our regulatory actions moving forward.

Next slide, please?

The staff assessment is that Westinghouse is operating safely. Enforcement actions related to the event are in process. Region II will continue to maintain enhanced oversight based on the findings of an augmented inspection team and the outcome of the NRC's licensee performance review process.

We have completed an internal review of our licensing and

oversight programs. The review determined that the Agency's overall response was adequate, appropriate and protected public health and safety.

Areas for improvement were identified and will be addressed by the staff.

Next slide, please?

On May 28th, 2016, Westinghouse shut down its conversion process lines to conduct an annual inspection and clean out of the S1030 scrubber which is one of the main air scrubbers for the uranium conversion process.

This slide shows a schematic of this scrubber which is designed to remove uranium from various conversion process exhaustion streams prior to release to the environment.

The exhaust enters the scrubber from the left on the schematic, transverses through the area where the velocity is slowed down, all the time being sprayed with water which is used to knock down particles which are then collected.

The exhaust then processes -- passes through a filter packing which collects residual particles and is then routed to the outside through a filter.

This scrubber is roughly 8 foot by 11 foot by 9 foot in size.

Next slide, please?

This slide shows the as discovered state of the inside of the scrubber on May 28th. During the clean out, approximately 197 kilograms of material was removed from the scrubber.

At the time, it was believed by the licensee that this material contained low concentrations of uranium and was, therefore, likely to be safe from an inadvertent criticality.

Therefore, Westinghouse made the decision to restart the conversion line.

However, analysis results received on July 13th indicated that the concentration of uranium in the scrubber was higher than expected which resulted in a calculated mass of 87 kilograms of uranium and exceeded the mass limit of 29 kilograms for nuclear criticality safety.

On July 26th, Westinghouse informed NRC they had exceeded their mass limit.

On July 28th, while discussing extent of condition, the licensee decided to shut down the conversion line again and thoroughly inspect the entire scrubber to verify that there was no additional uranium accumulation.

Material was found in the scrubber packing and floor that also exceeded the uranium mass limit. This discovery convinced Westinghouse management that none of the items relied on for safety, or IROFS, in place for the scrubber would prevent the excessive accumulation of uranium in the scrubber.

Next slide?

On July 28th, Region II chartered an augmented inspection team and inspections were conducted at Westinghouse between August 1st and September 2nd to review the facts and circumstances surrounding the

condition where the nuclear criticality safety mass limit was exceeded.

The augmented inspection team concluded that enough uranium was present in the scrubber to permit a criticality to occur without adequate controls.

Although controls were not reliable and available, the favorable geometric arrangement of the mass prevented an actual criticality.

The augmented inspection team concluded that the licensee had assumed that uranium from various process air streams was being captured via recirculating water and ultimately removed by monitoring the concentration.

However, process changes over several years permitted the formation of insoluble compounds of ammonia, uranium, and fluorides which caused the material to plate out and accumulate on the surface.

Items relied on for safety which might have prevented and detected the accumulation failed.

Concurrent with the augmented inspection, NRC issued a confirmatory action letter on August 11th which confirmed licensee commitments to remain shut down until restart corrective actions were completed and to take longer term actions such as safety culture initiatives and correction effectiveness assessments.

On September 28th, NRC issued Information Notice 2016-013 to inform licensees of the potential for uranium accumulation in off gas ventilation and scrubber systems.

NRC inspectors performed independent follow up at all the

other fuel facilities to verify that the licensees had evaluated their systems for similar problems.

We also evaluated the condition against the International Nuclear Radiological Events Scale which is a one to seven, with seven being most consequential and one the least and determined a rating of two for significant failures in safety provisions, but with not actual consequences.

Notification was made to the International Atomic Energy Agency on October 3rd, 2016.

Lastly, NRC concluded that this event met the criteria for an abnormal occurrence and, therefore, included it in the fiscal year 2016 abnormal occurrence report to Congress.

Next slide?

As part of the augmented inspection team, inspectors confirmed the licensee's identification of two root causes.

One, their configuration management program failed to detect implications of several modifications to the scrubber and upstream systems.

And, two, a weak safety culture and that management did not have a sufficiently questioning attitude or conservative bias.

Between September 7th and October 19th, Region II conducted inspections to verify restart commitments which were provided in the corrective action letter.

Based on licensee's actions and inspections results, I authorized restart on October 20th, 2016.

Follow up inspections to the augmented inspection team from September 28th, 2016 to January 27th, 2017, identified four apparent violations.

The enforcement process is continuing now with alternative dispute resolution.

On December 20th, Westinghouse was informed that, based on the findings of the AIT, Region II had established additional oversight with an inspection program adjustment in accordance with our assessment process.

Some additional oversight areas included inspection of CAL commitments not yet inspected as part of the restart inspections and observations of the scrubber clean outs.

A focus team inspection in January of 2017 reviewed additional samples and plant modifications, nuclear criticality, safety and operational safety.

In addition, the licensee performance review conducted in February 2017 identified one area needed improvement and added targeted supplemental inspections.

The area needing improvement is safety operations.

The supplemental inspections are in addition to the earlier program adjustment.

The licensee performance review also moved Westinghouse to a one-year program cycle review instead of a two-year cycle.

Following the Westinghouse bankruptcy declaration,

inspectors confirmed that licensee staffing and maintenance of regulatory requirements remained adequate.

Next slide, please?

Westinghouse has implemented modifications to the scrubber and to other equipment that affect the scrubber, revised the scrubber inspection and clean out procedures, conducted lessons learned training on control of items relied on for safety and management measures as well as several other actions.

In addition, Westinghouse has other initiatives underway including developing an excellence plan which will reference several INPO standards.

The independent third-party safety culture evaluation was completed and received by the licensee on May 2nd 2017.

Westinghouse noted that results were well aligned with gaps previously identified.

Consistent with actions taken by Westinghouse, NRC inspectors have observed improvements in safety culture, especially in the performance of the scrubber clean outs to include better pre-job briefs, more effective use of human performance tools, a questioning attitude from craft, and conservative decision making.

Next slide, please?

We will continue to provide the necessary oversight to verify the issues identified in the licensee's performance review were addressed and that implementation of corrective action letter items are effectively completed.

Additionally, we will review and verify the results of the safety culture assessment and corrective actions.

In addition, Region II and NMSS staff have implemented actions identified in NRC's lessons learned action report, action plan, which was developed in response to the NRC's January 30th, 2017 lessons learned report.

This is part of our efforts for continuous improvement and was undertaken to examine elements of the fuel cycle licensing and oversight program that could be improved or enhanced.

This concludes my presentation. I will now turn it over to Scott Moore to discuss the nuclear materials and waste program performance.

MR. MOORE: Thanks, Cathy.

Good morning, Chairman, Commissioners.

Today, I'm going to discuss the nuclear materials waste and waste program performance.

The materials program includes about 21,000 NRC and Agreement State licensees that perform a variety of activities in the areas such as industrial, academic, medical and fuel cycle operations.

Some of these activities involve intentional exposure of humans to radiation, particularly in diagnostic and therapeutic medical issues.

The NRC's 2016 performance and accountability report estimated that 112 million nuclear medicine or radiation therapy procedures are performed annually with a vast majority used in diagnostic procedures.

As a result, when we assess trends, the number of reported

events is small in proportion to the total number of activities carried out.

That said, the NRC staff monitors the data and continues to look for issues or events that warrant additional NRC response, communication and improvements in support of the materials program.

I'm going to highlight some of the issues we addressed this year as part of the National Materials Program Review.

Next slide, please?

We collect, monitor and evaluate industry operational data on an ongoing basis as part of our event reporting function.

This information is provided in an annual assessment report to the Commission. And, this year, that was SECY-17-0042 that was provided this past March.

Our performance evaluation process includes the review of operational performance trends, significant licensee performance issues and identification of issues and gaps in the NRC program that warrant high level management attention at the Agency Action Review Meeting.

The first bullet on this slide, can we have this slide back, please?

The first bullet on this slide, operational performance trends, refers to data examined in the nuclear material events database annual report and is part of our ongoing review of events.

The second bullet, licensee performance issues, refers to the specific criteria for identifying nuclear material licensees for discussion at the Agency Action Review Meeting.

Examples of that criteria include licensees with events resulting in failures to meet NRC's strategic goals or significant issues or events that result in escalated enforcement with aspects that warrant additional NRC oversight.

The last item, NRC program issues and gaps, refers to any programmatic issues identified by our self-assessments, annual event reporting and trending reporting special studies and enforcement action review.

Go ahead to the next slide.

The staff issues -- the staff uses criteria and information sources listed on this slide to assess and measure our performance including a graded approach from high level, high consequence events to lower level precursor monitoring.

This event review is conducted through use of our nuclear materials events database, also referred to as NMED, where we examine event information and trends of overall numbers of events as well as in more narrow categories to identify any trends that may indicate programmatic changes or weaknesses.

We also use the abnormal occurrence process including the AO annual report as well as a review of significant enforcement actions to identify events of high significance and identify any potential licensees with significant performance problems.

Strategic performance measures including the Agency's safety and security goals are monitored by the materials program offices and

were addressed in the FY '16 performance and accountability report and fully discussed as part of this year's Agency action review meeting.

In the next two slides, I'm going to discuss the results of the staff's NMED trending review.

Next slide, please?

During the FY '16 reporting period, there were 398 NRC and Agreement State licensee events reported in NMED. The annual report reviews data for the last ten fiscal years as depicted on this graph.

For FY '16, there were no statistically significant events in the overall data. There were a few statistically significant trends identified for narrow portions of the data.

The trends in the narrow data sets included a decrease in the overall number of NRC events and a decrease in the events involving lost, abandoned and stolen materials.

Contributing factors to these events were the transfer of licensees from NRC to Agreement State jurisdiction during the time period and the increased awareness of events and reporting requirements.

The total number of events per year has been relatively stable over this period and very, very small in comparison with a large number of radioactive materials use activities performed each year.

An additional point of interest is the peak that you can see near the start of that graph for 2008 and 2009, which represents events resulting from Walmart's one-time inventory of their tritium exit signs. And, we talked about this last year.

Walmart identified a large number of lost signs, 272 events in 2008 and 65 events in 2009. And, as we progress, you know, to next year, that will eventually move off the graph as we just go along in ten year increments.

We also looked a fuel cycle operating experience event data from 2012 to 2016. The results showed a relatively stable to slightly decreasing trend.

The number of escalated enforcement actions for materials and waste programs increased from 32 from the total number actions issued in FY '15, gauge user cases, actions involving radiographers, materials distributors and individual monitoring wrongdoing cases contributed to the overall number of enforcement actions in '16.

This change in trend is not sufficient to prompt additional action because the number of events and violations are very small in comparison to the total number of licensed activities.

And, also, the staff's currently planning a generic communication for security of portable gauges that should address some of the causes of this escalated enforcement.

Finally, abnormal occurrences, within the NMED, some meet the AO criteria and were reported to Congress each year in NUREG-0090. Eleven AOs were identified for FY '16, 8 in Agreement States and 3 in NRC's jurisdiction.

I want to say that no AO is acceptable, that the 11 AOs for FY '16 is a number that is within the variation of previous years' averages

since FY 2006.

Eight of the 11 were medical events and these 8 medical AOs are approximately 0.007 percent of the estimated number of nuclear medicine and radiation therapy procedures involving radioactive material performed in the United States annually.

We do not believe that there are presently any trends or significant safety concerns among medical licensees.

Next slide, please?

In summary, the nuclear materials and waste program met all strategic safety and security goals in FY '16. There was one fuel cycle facility that met the AO discussion criteria and you just heard about that already from Ms. Haney.

No significant trending or programmatic issues were identified in our review of operational performance trends, licensee performance issues or other assessments of the materials program.

Thanks, I'd be glad to answer any questions when we move to that.

And, I'll now turn it over to Chris Miller.

Chris?

MR. MILLER: Thank you, Scott.

Good morning, Chairman, Commissioners.

This morning, I'm pleased to talk about the results of the 2016 reactor oversight process self-assessment.

Next slide, please?

Our takeaways from the assessment this cycle are that the ROP, reactor oversight process, is a mature, effective program that provided objective, risk-informed, predictable oversight in 2016.

We revised the self-assessment program in 2015 to better assess the mature program. And, we implemented this revised approach in 2016.

While the 2016 self-assessment yielded positive results, we identified opportunities for a variety of improvements, many of which were implemented in 2016.

Next slide, please?

Each year, we complete the reactor oversight process self-assessment to evaluate the overall effectiveness of the ROP.

In 2016, we fully implemented the revised self-assessment program through three primary efforts.

First, we assessed adherence to the current program through performance metrics results and programmatic area evaluations.

Secondly, we monitored revisions to the reactor oversight process and assessed the effectiveness of these recent changes.

And then, finally, and new for 2016, we performed the new elements of the assessment program which are the regional peer and focused reviews.

I will further explain the purpose of and results of these new reviews in more detail shortly.

Next slide, please?

The results of the 2016 reactor oversight process self-assessment were documented and provided to the Commission in an April 2017 SECY paper.

This year's self-assessment process showed that the NRC implements the ROP with good adherence to its program guidance.

For 2016, staff identified that all of the self-assessment performance metrics were met.

The staff also evaluated the effectiveness of the four major program areas of the ROP which include the performance indicator program, the inspection program, the significance determination process and the assessment program.

The details of the staff's program area evaluations are included in Enclosure 1 to the ROP self-assessment SECY paper.

Through the evaluations, the staff determined that the performance indicator program continued to offer valuable insights into plant safety and security performance and coordinated well with inspections to provide predictable inputs into the assessment program.

NRC inspections independently verified that licensees operated plants safely and securely.

The significance determination process continued to be an effective tool for determining the safety and security significance of inspection findings.

We are evaluating past changes to the SDPs such as changes for Manual Chapter 0609 Appendix O for Post-Fukushima orders and

we're also considering other recommendations for changes from previous assessments.

Additionally, the reactor assessment program continued to help us ensure that the NRC provided adequate oversight and that we take appropriate and predicable actions to address licensee performance commensurate with the safety significance.

The self-assessment process also found that the recent revisions to the reactor oversight process have been effective.

For example, we reviewed the security baseline inspection program and determined that recent changes to the program such as the revised resource allocations have yielded positive results.

Specifically, we have observed improved consistency in the resource expenditures between the Regions as well as a reduction in resource expendage overages and have provided increased resources where a need was identified by both historic data and by inspector feedback.

We also determined that the collective changes assessed during the review of the security baseline inspection program have not resulted in any negative unintended consequences caused by individual or cumulative inspection program changes.

In 2016, we performed a comprehensive assessment of the baseline inspection program and identified some enhancements to all but nine inspection procedures and concluded that the inspection procedures are functioning as intended.

Areas for improvements included clarification of language

with result to requirements, guidance, and other discretionary items to minimize ambiguity.

For example, should versus shall, required versus optional parts of the procedures to aid in more consistent implementation of the inspection procedures.

Program basis documents such as Manual Chapter 0308 Attachment 2 the, “Tech Basis for Inspection Program,” which were in need of updating to reflect changes to the inspection program that have occurred over the years were identified for changes in areas such as operability determinations.

Additionally, in 2016, there were other opportunities to identify areas for enhancement.

To help address the timeliness of significance determinations of potentially greater than green findings, we have implemented the inspection finding resolution management process.

We believe that this initiative will help improve both consistency and timeliness of processing findings. We have a public meeting scheduled in July to get feedback on the process from external stakeholders.

We will also perform an effectiveness review at the conclusion of the trial period for this process.

We're also addressing actions to enhance the consistency across the Regions for classifying low, significant findings as minor or more than minor.

Additionally, we are reviewing and reformatting the baseline

inspection program requirements and guidance in order to aid in the implementation of the streamlined inspection report generation in the replacement reactor program system, or RRPS, which we expect to improve efficiency while also improving consistency of the inspection reports.

Also, we continue to implement lessons learned from Brown's Ferry 95003 lessons learned items and we will consider the closed recommendations for future effectiveness reviews.

Next slide, please?

In 2016, we conducted the first Regional peer review in Region II. During the Regional peer review, the staff identified recommendations to help improve the ROP in a process that we feel was beneficial and promotion of Regional and Headquarters collaboration.

Even though the peer review was focused on Region II, all of the Regions participated to identify areas for improvements and to share best practices.

Each of the other Regions also took the team's report and evaluated it against their own program.

NRR is reviewing the Regional evaluations to identify potential opportunities for greater consistency amongst the Regions.

The Regional peer review proved to be a valuable tool to help bring clarity to inspection procedures, improve inspection implementation and encourage cross Regional collaboration.

Also, in 2016, we performed the first focus review. This one evaluating inspector training and qualification program.

During this review, we found the inspector training and qualification program to be robust and effective and ensuring that inspectors acquire and maintain the necessary knowledge and skills to successfully implement the inspection program.

However, we did identify several recommendations to increase the efficiency and effectiveness of the training program.

For example, to increase flexibility while maintaining adequate consistency in the inspector requalification process, the team recommended that managers approve credit for technical courses for some of our technical staff in lieu of traditional simulator-based requalification training at the Technical Training Center.

Going forward, the Regional peer review and focus reviews will be conducted on alternating years. So, in 2017, we will perform a focused review on the engineering inspections.

And, in 2018, we will hold another Regional peer review.

Next slide, please?

To summarize, our self-assessment results to date continue to indicate that the ROP provides effective regulatory oversight of the nation's operating power reactors, meeting established program goals and achieving its intended program outcomes.

Specifically, the ROP ensured openness and effectiveness while supporting the Agency's mission and its strategic goals of safety and security and was successful on being objective, risk-informed, understandable and predictable.

We clearly have more work to do, including improving timeliness of significance determinations that continues with the ongoing inspection findings resolution management effort.

Prioritizing current improvement recommendations and improving efficiency in a number of areas.

We believe that we should be looking for ways to accomplish our safety and security mission better and more efficiently and we will keep the Commission informed of our efforts in a timely manner as outlined in the recent SRM for COMSECY-16-0022 Proposed Criteria for Reactor Oversight Requiring Commission Approval and Notification.

I'll now turn the staff's presentation back over to Victor McCree for final comments.

MR. MCCREE: Thanks, Chris.

Chairman, Commissioners, thank you again for your time and attention.

As you've heard, we continue to implement our oversight processes and oversight program activities in a way that advances our safety and security mission.

We met all the objectives of the Agency Action Review Meeting process and our discussions confirm that the actions that we've taken, those that we've planned and the activities that are underway are appropriate and consistent with our oversight process.

Consistent with our efficiency principle of good regulation and our excellence value, we continue to focus on areas where we can identify

and implement areas to improve and we remain committed to that.

So, with that, we're ready to answer your questions.

Thank you.

CHAIRMAN SVINICKI: Well, thank you all for your presentations consistent with the order of recognition for questions today, I will begin with 10 minutes, not 60, there we go.

Victor, I thought you were going to say that consistent with our efficiency principle that the staff finished six and a half minutes early.

So, I commented in the beginning that it's a very full morning, and in light of that, I didn't make any opening remarks.

But, Victor, let me begin by leveraging off what you just said, but I'll use slightly different words.

Reviewing -- listening to the presentations, reviewing the SECY papers that were referenced in some of your presentations and just looking at the body of work here, both the systematic evaluations that were talked about, the process improvements that are looked at, some are in implementation.

And then, the specific cases provided by the Regional Administrators here today, I am confident that the Agency continues to take a very systematic and methodical approach to our oversight and our evaluation of these issues which I could make a joke about engineers and the fact that that gives me great confidence.

I like things that are systematic and methodical because I think they bring a strong rigor to what we do. And, there are a lot of case

specific circumstances that we have to look at, but what I'm looking at as a Member of this Commission is, do we bring a coherency and, you know, does the same kind of event, if evaluated in a different Region or by difference analysts and experts within the Agency, would it yield the same regulatory outcomes?

And, I think that this rigorous approach gives us high confidence. There are still human beings in this process and so we are -- we don't pretend that it's otherwise.

But, I think in terms of these types of evaluation processes, we can reside a lot of confidence in that rigor.

I'll just begin by talking about the continual reassessment that's done. I appreciate the presentations by Scott and Chris Miller in taking the systematic look across the programmatic effectiveness.

I will just say that, to Chris Miller, I've commented in other Commission meetings about the focus on significance determination process timeliness. I'm not going to re-ventilate those concerns here today.

I continue to be persuaded that Mr. David Lochbaum in a presentation at our Regulatory Information Conference, not this past year, but one or two years ago, I thought gave a persuasive presentation that showed that the concern about timeliness in the SDP, the metric on timeliness is dominated by a handful of complex significance determinations.

And, therefore, the multitude of the significance determinations are made in a very, very timely way within the existing framework.

And, I don't want us to short cycle the complex ones.

So, I've mentioned that, but that being said, what the staff has implemented there, this resolution process, I think is mostly about just escalating the complex ones and making sure that working level staff aren't spinning their wheels for long periods of time.

And, so I think I can align with that, although I'm not sure there's a problem. That just sounds like a good governance, good management measure. So, I look forward to that.

On the Regional peer review, I appreciate that the staff was sensitive to -- it was beneficial but it was a lot of resources and commitment by people in the Regions who have a lot of inspection work to do. And, we need to be mindful of getting the baseline inspection programs done.

I think that there are counterpart meetings and other things that compliment this peer review. So, as you move forward, I'd recommend that you continue to look at the scope and the time commitment of those very, very busy individuals.

But, I thought you did a very healthy -- you did one, but you bring -- you're bringing a real questioning attitude to looking at the span and scope of it. So, I think that's very positive.

Turning to the individual licensing matters we're talking about today, Dan, I'll start with you.

You indicated that Entergy, in the case of Pilgrim, identified the right problem areas and the right causes but that, ultimately, the corrective actions were not sufficient and I think you said focused -- the focus and depth

needed.

Where could a licensee look to make sure that there is good alignment between the focus and depth that is needed?

Because it sounds like the first two things were on point. Is it a lack of awareness of maybe extent of condition or other things? What causes those things to be disjointed in your view?

MR. DORMAN: Thank you, Chairman.

I think the principles areas that those comments apply are the corrective action program implementation and the safety culture.

And, I mentioned that most of their cause evaluations pointed to leadership standards communicated effectively to the organization as the root that issue.

And so, their corrective actions focused on leadership behaviors and values.

And, what the team found was that, first, because they focused at the leadership level, it wasn't penetrating into the organization. So, it's more of an extent of condition in the recovery to really turn the whole organizations.

So, the leadership behaviors and values were the root cause of the degraded performance. But, it had seeped -- it had already seeped over a long period of time into the organization and, in order to turn that around was going to take more focused effort down into the organization.

So, I think it's going beyond the cause to the extent of the condition and addressing that in the corrective actions as well.

CHAIRMAN SVINICKI: And, that's what the revised recovery plan will be addressing.

MR. DORMAN: That's what we're looking for that --

CHAIRMAN SVINICKI: It'll be making this correction?

MR. DORMAN: -- to be addressing.

CHAIRMAN SVINICKI: Okay.

MR. DORMAN: Yes.

CHAIRMAN SVINICKI: Thank you.

And then, as Pilgrim moves closer to the date of permanent cessation of operations, could you touch briefly on how NRC's inspection and oversight change in focus, if they do, and if so, how?

MR. DORMAN: So, in the Inspection Manual chapter covering the oversight process for reactors in 2515, there is a an appendix that the staff developed and it's a result of our experience in the oversight of Vermont Yankee and they -- Vermont Yankee had announced closure about 15 months before the actual closure.

And so, we shift our focus to operations and maintenance activities and less focus on engineering and modifications because they're not making as many modifications.

So, there is a structured process for the Regions to look at plants like Pilgrim or a number of others that are in this condition at this point and shift the focus.

So, it's within the baseline, it's not a change in overall resources, it's a shift of focus and we apply that to Pilgrim as well.

Pilgrim being in column 4 doesn't change that because that's in the baseline. There were -- we did do a focused look at maintenance activities and things that they were deferring in this most recent refueling outage and the remaining cycle of operations to make sure that we had no safety concerns with the maintenance that they were doing.

And, that, I think, was in our most recent -- it will be in the next quarterly report, I think.

But, we -- the staff did not identify any safety concerns with their maintenance activities as they go through these last two years.

CHAIRMAN SVINICKI: Okay, thank you.

And, Kriss Kennedy, I have to use last names because we've Chris's side by side by side down there.

You mentioned that ANO will be reassessing the effectiveness of all actions shown as completed, I think this was on your slide 20.

And so, I interpreted that to mean that that would include the closed items.

So, my question is, what's the basis for establishing the scope of this relook? And, if it includes the closed items, does it indicate some sort of weakness in the closure process for closed items?

Do you know what I mean? Like, if you have to go back and, in a sense, reopen that, is there a programmatic or systematic issue with the closure process?

MR. KENNEDY: Thanks for the question.

So, when we -- we identified early on that, as the licensee identified their actions, that they really were missing effectiveness reviews for the individual actions.

In other words, you know, answering the question, we know we have been successful when and then fill in the blank for each of the actions.

And so, as we were conducting our, starting in August, our inspections of the confirmatory action letter actions, we were challenged by -- because the licensee had not provided us with an assessment of, you know, not just we completed the action, but we know it's effective and here's how we know it's effective.

So, we provided that -- we've been providing that feedback for a while.

So, a new leadership team came in, recognized that, in fact, they needed to implement and establish more -- better effectiveness criteria for the actions. And so, they've done that.

And, but, in the meantime, we were inspecting items and trying to close items. For those items that we closed, and some of them are very straightforward, change of procedure and is the procedure being implemented, we were taking on the role of determining the effectiveness of some of the actions.

CHAIRMAN SVINICKI: Okay. So, we were, if I'm understanding, the NRC was closing items. I mean, there was no misperception there that, indeed the action had been taken.

In some sense, is this a little bit related to what Dan and I

were just discussing, which is the question of, if this action has been taken and it's closed, does it have the durable effect on changing performance that the licensee intended it to have, and that gets to the effectiveness you're talking about.

So, it's really almost a step beyond the closure?

MR. KENNEDY: It does get to the effectiveness and, in the end, we're talking about the effectiveness of individual actions for each of the categories in the confirmatory action letter the licensee will conduct an overall effectiveness review to determine, you know, have we improved safety culture? Have we improved a problem identification resolution looking at the bigger picture?

CHAIRMAN SVINICKI: Okay, thank you. I appreciate understanding that better.

And, my time's up, but I just -- maybe this is more of a comment for Cathy, I appreciated your presentation on the Westinghouse fuels facility event.

I did note in some of the background documents that the staff is looking for those areas of improvement. You made mention of that.

But, it indicated things such as improving licensing guidance for low -- for sequences of low risk.

And so, my only concern there is, and this is just a caution as the staff moves forward, it's important not to dilute our overall risk informed regulatory framework or the dilution of inspection resources chasing, you know, areas that are --

I realize that the fundamental learning here was not people didn't think that the scrubber posed this sort of criticality concern and it did.

So, it's that question, it's pernicious, you know, what aren't we looking at? Because there's a deep assumption that some event can't occur.

But, that's a tricky thing, I think, for the staff to navigate. So, I just offer that. Obviously, you don't want to spread important inspection resources over things, sequences that have very low effect.

So, all right, Victor is eager to, but I'm over my time, so I will maybe -- you'll have a chance at the very end to make that important comment.

And, I turn to Commissioner Baran.

COMMISSIONER BARAN: Well, thank you all for your presentations and for your work. I think this is one of the most important Commission meetings we have each year, so I look forward to our discussion with the four panels.

Dan, I'd like to focus my questions on Pilgrim.

In your presentation, you discussed how aspects of Entergy's recovery plan for Pilgrim were not acceptable and are being revised.

And, you talked about how recent events indicate continuing gaps in the plant safety culture.

You also focused on the weaknesses of the operation standards at Pilgrim. NRC's inspection found a lack of rigor by control room shift managers in assessing and correcting degraded conditions at the plant,

the lack of a questioning attitude among operators and a failure to hold other departments to a high standard in protecting safety margins.

However, you also expressed confidence in the ability of the control room operators to place the plant in a safe condition when necessary.

There seems to be some tension between those findings. Can you untangle that for us?

MR. DORMAN: I'll try, thank you, Commissioner.

Yes, I recognize there's a little bit of cognitive dissidence in the notion that the operators are part of why it's safe and the operators are part of the problem.

And so, I would make a distinction between the role of the operators at the controls of the station and their knowledge and ability when there's an upset condition in the plant to recognize it and to put the plant in a safe condition. So, that's part of our confidence in the conclusion that the plant is safe to operate.

Another role of the operations department is when there are degraded conditions in the facility to make the operability determinations and they own the final determination.

The shift manager is a signature on that determination and that's because we have a confidence in their training program and their knowledge of the design basis of the facility.

So, there's paperwork that comes through the control room on a regular basis looking for their final judgment.

A lot of that work is done in the engineering department,

maybe maintenance work, things that are coming through for their approval that this is complete staff work, if you will.

And that's where we find examples like the safety relief valve failure in 2013 where the corrective actions for that that came through the control room failed to recognize that the corrective actions did not address the root issue of that failure in '13 and, therefore, contributed to the failure in '15.

So, those kind of issues of the level of rigor that they're applying and their expectations of the rest of the station to support them and ensuring that the margins are maintained, is not -- is an area that Entergy needs to apply more focus in their recovery plan.

COMMISSIONER BARAN: Okay.

You talked about finally concluding that column 4 is the right place for Pilgrim as opposed to column 5 which would require the plant to shutdown until problems were addressed.

It sounds like a key factor in your thinking was that the NRC staff has not seen a pattern of failure to effectively address previous safety significant findings.

It seems, though, that the inability to properly identify and resolve degraded conditions at the plant and the inability to effectively plan and control work are recurring themes at Pilgrim.

You mentioned the events in March, one which involved operators inadvertently transferring a significant amount of water into the Torus.

Do you see those as symptoms of the same underlying

problems? And, can you walk us through the staff's analysis of whether there is a pattern of failing to effectively address previous safety significant findings?

MR. DORMAN: So, the Torus issue I would say is a little bit different. It's a procedure use and adherence issue.

There is a piece of that that I mentioned in the presentation where our inspectors came in about a week after that event and looked at the traces and found a discrepancy between two level channels that had not been picked up by the operator. So, that's the corrective action piece of that issue.

To the broader question, this was an area of substantial discussion for me, because, as I indicated in the presentation, the 95002, when Pilgrim was in column 3, found that they did not meet three of the four objectives related to identifying the root causes and identifying appropriate corrective actions for the scrams that occurred in 2013.

We did a follow up to that later in 2015 and were able to close that inspection. And, I will say that since the complicated scram in January of 2015, in the last two and a half years, there has been one scram, unplanned scram, at the station with no complications.

So, I think there is, you know, an indication that they have gotten to the root of that issue.

On the SRV issue, the last white finding, the 95003 team looked at that issue and concluded that there was a root cause that they had not gotten to in their corrective action.

So, there is -- so that is another data point of continuing gaps in the corrective actions. But, I think we also, in the first phase of the

95003, which was conducted in January of 2016.

The focus of that inspection was to go back through their corrective action program for the last five years and make sure that there wasn't anything latent in there because of the weaknesses that we were aware of in the corrective action program that there wasn't any safety significant issue that had not been adequately addressed.

So, while we have several data points over several years that could show the continuing weaknesses, we have taken a thorough look at the safety significant issues and their corrective action program and have confidence that that's not -- that doesn't represent a pattern of failure to address the safety significant issues that would warrant column 5.

COMMISSIONER BARAN: So, it sounds like you and your staff and the Agency, you had a lot of discussion about this question about whether or not column 4 is correct or you should be thinking about column 5.

MR. DORMAN: Absolutely. We had a lot of discussion, there was a lot of discussion within the team. And, I mentioned that we do a continuous assessment and quarterly performance reviews with the management teams.

COMMISSIONER BARAN: And, was this a close call in your mind about where they belonged?

MR. DORMAN: No, you know, I think there was a lot of discussion. There's obviously a lot that they need to address. They are a column 4 plant.

The inspection team, I mentioned that most of them had not

-- hadn't been involved with Pilgrim before. That team also included residents or senior residents from about one out of five plants in the rest of the country and they came in and they looked at Pilgrim and they said this plant is not functioning at the level that I'm accustomed to, but ultimately concluded that column 4 was the right place for them to be.

COMMISSIONER BARAN: I think everyone agrees that Pilgrim is having a lot of problems and that the safety margins at the plant are not what they should be.

As part of the Post-Fukushima Hazard Reevaluations, Pilgrim was going to submit a detailed seismic probabilistic risk assessment by the end of the year.

That made sense, I think, because of all the plants in the country, Pilgrim identified the biggest increase in seismic risk from its seismic hazard reevaluation.

But, in light of Pilgrim's planned shutdown in 2019, Entergy requested relief from this requirement and the staff agreed to relax it so Pilgrim will not be completed the seismic PRA.

Wouldn't the risk in sites derive from a seismic PRA have been useful to the Region in determining whether the current safety margins at Pilgrim are adequate?

MR. DORMAN: I want to draw a fine distinction in what you said. The significant increase, you said, in seismic risk, I would say there was a significant increase in the seismic response spectrum for the seismic hazard.

One of the things that the staff looked at in evaluating the

schedule was the individual plant examination for external events, the IPEEE that was conducted for all plants in the country back in the early '90s.

And, specifically for Pilgrim, indicated substantial margin for seismic events above the current design basis.

So, that combined with commitments that the licensees made in what they called the expedited seismic evaluation process early in this post-Fukushima process, they looked at what the vulnerabilities were against those external hazards and identified compensatory measures.

And then, the implementation of the FLEX modifications at the stations.

So, those are the -- Pilgrim has fully implemented the FLEX modifications. That's been fully inspected by the staff so that provides additional margin against the seismic hazards.

So, all of those factor into the staff's consideration.

In addition, I would say that the schedule for their seismic PRA was they would submit to the staff at the end of this year. The staff would have then begun a review of that evaluation that would have potentially led to identification of modifications to the facility that we would typically do over a couple of operating cycles.

So, while the analysis would be submitted to the staff at the end of this year, the evaluation in '18, it would be several years beyond the closure before any, I'll characterize it as routine modifications would be implemented.

So, then another question comes down to, what's our

confidence that, if we got that analysis at the end of the year that it wouldn't identify something that warranted prompt action? And, I think it's the review of the IPEEE and the implementation of FLEX that gave us confidence that there's -- it's highly unlikely that there would have been something in there that would have promoted immediate action.

COMMISSIONER BARAN: I guess that's the part I'm asking about. So, I take your point about the lack of time to perform any modifications that would have come out the seismic PRA given the schedule for them shutting down.

But, what I'm trying to understand is, is there nothing a seismic PRA could have revealed that would affect NRC's assessment of the continued safety of operating the plant today?

MR. DORMAN: I think from the staff's review of the existing margins for seismic events in the plant that I think the staff concluded that it's highly unlikely that that would occur.

COMMISSIONER BARAN: Well, it was up to the staff to decide whether to waive their requirement for Pilgrim to complete a seismic PRA. It wasn't a Commission decision.

But, I think that the staff made the wrong decision on this. I think given the particular set of circumstances at Pilgrim, I think NRC should have required the detailed seismic PRA.

CHAIRMAN SVINICKI: Thank you, Commissioner Baran.

Commissioner Burns?

COMMISSIONER BURNS: Good morning and thank you

for the overview in the various -- your general areas in terms of our programs and also the insights on the facilities that are under particular scrutiny today as we cover ANO and Westinghouse Fuel Facility.

I might just actually start on -- in the materials area.

And, one thing, I guess, and Cathy, this -- I'm just -- I think you may have addressed this, but I just wanted a sort of a clarification.

In looking at the accumulation issue, I think you noted in your presentation, the identification that the IROFS really didn't address this or something.

So, and you talk about corrective action, but I'm trying to understand how is that being addressed? Is there a movement to a new IROF on that or something that looks at that accumulation factor? I'm trying to understand what the sort of response is from -- or the findings that area.

MS. HANEY: Sure, I think really what it was is, if you step back and look, there were changes made in the system over time, if you go back several years, and this goes to the almost more towards the safety culture side of the questioning attitude or configuration management changing in the systems.

All of those changes over time led up to one of the factors that contributed to the situation of discovering the amount uranium in the scrubber.

And then, that was also linked with the assumption that the scrubber was a low risk system and that the accumulation wouldn't happen.

So, there were a lot of things that fed into cause to the

problem coming into it.

But, stepping back, there were IROFS that should have -- items relied on for safety that should have prevented this from happening.

COMMISSIONER BURNS: Okay.

MS. HANEY: So, it's hard to say, exactly. You know, there was one specific IROF that failed because there were multiple contributing factors that cause it.

But, stepping back now and looking at the system as a whole, looking at -- recognizing extent of condition, what other things could we step into, what, from the licensee's standpoint, not NRC, looking at it from an inspection standpoint. What changes in the IROFS would we expect to see to prevent something like this happening again?

Now, to these changes in the IROFS could either be administrative or engineering controls, so either one would be okay.

COMMISSIONER BURNS: Okay. And so, where are they on that path?

MS. HANEY: Well, from the standpoint of the -- our authorization to restart was based on we felt that there were proper control in place.

But, at the same time, I think you'll hear from the licensee, and I made reference to this, that they have developed an excellence plan that goes well beyond NRC requirements.

But, looking into some of those areas, safety cultures, the questioning attitude, the engineering aspects of the system and bringing all

those into play to actually, are there further improvements that can be made in the systems.

COMMISSIONER BURNS: Okay, thanks.

And, Scott, I would sort of have a couple questions related to I think your sort of the general picture you're trying to give on the materials program which I acknowledge is very difficult, I think, not only from the number of licensees we're really talking about, the types of licensees and the types of uses of material, the number of actually regulators we have in this area.

We really have about 38 different regulators here, although, under the umbrella in the Agreement State Program.

And, you talked about the sort of a pitch up in escalated enforcement actions in terms of the 32 more than whatever the number was last year.

Were there -- one of the things is, were there particular types of licensees where that sort of number jumped? And, again, I'm not trying to make, you know, overdramatize the particular figure because you say there's a heck of a lot of folks out there even within our jurisdiction.

MR. MOORE: Thank you for the questions.

So, the increase was 32 over last year's 35. It was a 91 percent increase.

COMMISSIONER BURNS: Yes.

MR. MOORE: And, the biggest group of those was portable gauges. There were 14 on portable gauges and then they go down from that 14 into different groups.

But, the total number, 67, wasn't out of the range of others that we received in previous years. For instance, I think it was in the 2005, 2006 range of escalated enforcement.

So, as I mentioned, you know, we've got some activities going on to address those. And, they were -- they did have commonalities amongst some of them.

For instance, in the portable gauge area, it was security with the gauges, some gauges were being run over on sites, those kinds of things.

COMMISSIONER BURNS: Yes, and is that what this -- the generic -- is the generic communication you talked about address the portable gauge or what --

MR. MOORE: Portable gauge and radium.

COMMISSIONER BURNS: Yes, what would you inspect, I mean, without --

MR. MOORE: We would just remind them of their responsibility to maintain cognizance of their gauges.

COMMISSIONER BURNS: Okay, okay.

MR. MOORE: And, talk about some of the events.

COMMISSIONER BURNS: Okay, all right, thanks.

The -- okay, let me go maybe to you, Dan, and listening actually to Kriss Kennedy in terms of the ANO which is, in some respects, at the other end of the cycle here with respect to the CAL, the implementation of correction action program coming out of the column 4 designation.

So, the one thing to hear from Kriss is, when we look back

in terms of the time frame here, we're about two years after, as I recall, after the CAL.

MR. KENNEDY: About a year.

COMMISSIONER BURNS: About a year after the CAL. But, we're -- I think the number I was getting, it says we're looking at sort of the timing.

So, that goes to this issue, I think, with respect to, you know, with respect to Pilgrim and the announced cessation of operations in 2019.

So, have you thought of or any ideas, what might the CAL on Pilgrim, how might it be looked differently because of that ultimate decision to cease operations within two years?

MR. DORMAN: I think that will not make the CAL that we'll issue in the coming weeks significantly different.

If you look at the commitment dates in the ANO CAL, they go out one and a half to two years I think from --

COMMISSIONER BURNS: June?

MR. DORMAN: -- June 2018. So, about two years from the CAL.

COMMISSIONER BURNS: Okay.

MR. DORMAN: Or, yes. So, I think -- but I think one of the things that we've had a little, but very little conversation about at this point is, what will that look like in the transition to decommissioning?

There will be, I would think, some things in the CAL that may not carry into decommissioning, but some of the safety culture issues,

corrective action program implementation, as they go into decommissioning with a full spent fuel pool and dry storage and the plans to move fuel from pool to dry storage, some of those issues will still need to be shored up.

So, I think we may be looking less at differences in the CAL that you'll see this next month or so rather considerations of what in that CAL if Pilgrim does not get to a point of leaving column 4 before the final closure of the station, what is appropriate to carry over into the decommissioning phase.

But, hopefully, by then, that won't be necessary, but we have acknowledged that possibility at this point, I would say.

COMMISSIONER BURNS: And, I take the point, because I think you're right, there are certain things it's, you know, operating as one thing, maintaining it and transitioning to decommission, the other.

But, there are still important things in terms of procedural adherence, attention to safety, attention to site conditions and other types of things in terms of how you work through and how you operate, if you will, or conduct licensed activities.

So, that, I take the point, I think you're right on that there is a relevance to that and that may shape that.

I'll go to Chris Miller for this one. And, Chris, I appreciate the overview in terms of the ROP and I had my question written down here.

And, one of the things that you said, one of the outcomes of some of the recent internal self-assessments was a recommendation for PRA training for the significant determination process.

What types of PRA topics will the training cover and when

is it expected that that would sort of go into play or go into --

MR. MILLER: Thank you for the question.

What we're looking at is better tools for the decision makers who are involved in the cert process or evaluating the results of the analytical work that is done to evaluate a finding.

So, we want to make sure that the decision makers and other people involved in the process to determine what the final significance is, whether it's, you know, a greater than green significance.

We want to make sure that they have all the tools in the toolbox to review that. We expect that training is to be finished sometime in probably in the next month or two and put into iLearn.

We're going to have some rollout of that with the decision makers.

But, it's really, you know, what are the important questions to ask when you're talking, you know, to an SRA about a particular finding and, you know, what are the sensitivities? You know, where are the, you know, biggest vulnerabilities in the assumptions that are being made? That kind of information.

COMMISSIONER BURNS: Okay, thanks.

Thanks, Chairman.

CHAIRMAN SVINICKI: Well, again, this is a very important meeting.

Do either of my colleagues have a last question?

(NO RESPONSE)

CHAIRMAN SVINICKI: Well, if my colleagues will indulge me, could we give Victor one minute if he felt strongly about responding on the point that I raised and then didn't allow them to respond to, maybe we'll just give him one minute.

MR. MCCREE: Actually, Chairman, I hope I was being -- I asked -- I had a sidebar with Cathy as I thought about your observation and she has a better question and answer -- answer I guess to my question.

But, would you mind sharing?

MS. HANEY: Thanks, Vic, and I do appreciate the comment and the caution because that is something that, when we did receive staff's report, I think I'll speak for Mark Dapas and I both, you know, focused in on that.

We do have to be very careful about focusing on the high risk areas.

I think where I see things going, and I'll speak from the inspection side, is really, it's not so much having the inspectors look at the low risk areas, but yet, when a licensee comes back to us and says, oh this system is low risk, you don't need to look at it, it's us questioning why do you think it's a low risk system?

CHAIRMAN SVINICKI: And based on what?

MS. HANEY: What --

CHAIRMAN SVINICKI: Yes.

MS. HANEY: So, really, so we would focus, you know, and then using the scrubber as an example, it's when we first learned of the event,

and I was asking questions about, you know, how did this happen? And, the answer was, well, it was a low risk system, we didn't look.

But then, we just go to the next level of question, well, why did we think it was a low risk system? And, that's where I see, as we go forward with changing inspection guidance and licensing guidance, that's really the focus, where we're going to look at the focus.

CHAIRMAN SVINICKI: Okay, I appreciate that clarification. That was a really good response.

MS. HANEY: Thank you.

CHAIRMAN SVINICKI: Thank you for that. I don't know what Victor's was, but he can tell me over lunch sometime.

Okay, so we will take a five minute break here.

I thank everyone for their presentations. So, how about 10:40?

Thank you.

(Whereupon, the above-entitled matter went off the record at 10:34 a.m. and resumed at 10:40 a.m.)

CHAIRMAN SVINICKI: All right, thank you, and we will now resume our meeting by hearing a series of presentations from our licensee participants who are here today. We will begin by hearing from Entergy, specifically on Arkansas Nuclear One. So I invite, I believe Christopher you'll begin. Thank you.

MR. BAKKEN: So good morning Chairman and Commissioners. My name is Chris Bakken. I'm the executive vice president

and chief nuclear officer for Entergy. My team and I are here this morning to discuss two of our sites in particular, Arkansas Nuclear One and Pilgrim. However, if you could go two slides, please.

What you'll see here is our nuclear strategic plan, and our discussions today are in the context of much broader efforts to improve the overall performance of our fleet. So our comments today are predominantly on the two facilities we're here to describe and discuss.

However, what this does articulate are the key elements of our recovery efforts for the full sleet. So focused on being professional, which is improving human performance, improving our succession planning, our depth of capability, adding resources to our units, focused on fixing the plant, which is about improving safety margins and improving equipment reliability, and then also working to operate as a fleet, which is really at a fleet level and fleet governance, to fund our own performance problems and correct them before your team have to do so.

So those are the key elements of the strategy. While we believe our fleet performance is improving, we do have a long way to go to reach our goal of becoming one of the best nuclear operators in the country. Significant investments are being made in our people, plants and processes, and we have the full support of our company's leadership and our board of directors.

Our detailed plans are outlined in our five-year nuclear strategic plan, and executing on that plan is our top priority. This strategy is built on the expectation of being much more safety-focused and compliant

operators. Ultimately, the plant will be judged by its effectiveness in improving our overall fleet's performance.

I believe our relationships and their actions with the agency are improving. Appropriately, our performance determines the level of NRC oversight we receive. I believe the agency is acting in a professional manner, and I appreciate the way they are working with us. We have a few challenges from time to time as you might expect, but they've all been resolved in a constructive and professional manner.

Our goal is to exit Column 4 on ANO next year and at Pilgrim in 2019 before the unit closes. We have to earn this, and my site leaders will elaborate on this more, I would say, in a few minutes. We're here today to specifically discuss the status of recovery efforts at Arkansas Nuclear One Units 1 and 2, and the Pilgrim Nuclear Power Station.

Our recovery plans incorporate learnings from NRC inspections and observations, industry observations, our root cause analyses, organizational capacity studies, and input from other key stakeholders. As I mentioned last year in this meeting, ANO is a critical long-term asset for Entergy and for the state of Arkansas.

The facility plays a key role in delivering electricity to customers across the state. ANO is a major employer and it continues to help the local community to be a great place to live and work. Entergy is committed to returning ANO to being one of the industry's strongest performers.

Specifically to today's discussion, as I said our goal is to exit

Column 4 at ANO in 2018. We're committed to continuing to safely operate Pilgrim through June of 2019, after which decommissioning activities will commence. The site has the full support of my leadership team, the company and its board of directors. We continue to make investments in the plant and work aggressively to improve its performance.

We're providing significant resources so that we can finish the station's operating life on a strong and positive note. Our goal is to exit Column 4 before the plant shuts down in June of '19. We do not intend to coast, so to speak, into the plant shutdown, but our intention is to finish strong.

I'll now turn over the discussions on ANO specifically to site vice president Rich Anderson, who will be followed by the Pilgrim site vice president in the next presentation, Brian Sullivan. So Rich.

MR. ANDERSON: Thank you, Chris. Good morning. My name's Rich Anderson I'm the Site Vice President at Arkansas Nuclear One or ANO. Chairman and Commissioners, I appreciate the opportunity today to provide a status of our progress on ANO and the work we're doing with respect to our Comprehensive Recovery Plan and the actions moving forward to achieve the goal that Chris talked about, to achieve the performance level that would warrant closing the confirmatory action letter in 2018.

When I was named site vice president of ANO, the site resumed the process of implementing the Comprehensive Recovery Plan and making progress in several notable areas.

However, it was quickly recognized that getting the full effect

and be fully effective with the Comprehensive Recovery Plan, the focus of that plan needed to shift from being done with the help of contractors and consultants, and shift that ownership into the line organization, such that we've engaged the employee population and our line managers own and implement the actions, so that they're sustainable within the organization once the recovery plan is over.

Several organizational changes were needed in support of this effort, and alignment to strengthen ANO. Key changes in the operations area, training, planning, maintenance support and projects, as well as maintenance have strengthened the leadership team and we're gaining alignment and better integration with the workforce.

Focus is being placed on four key areas that encompass the Comprehensive Recovery Plan and will drive the overall performance improvement at the station. Nuclear safety culture, which includes decision-making and communications up and down the chain, both from the management team and communication of information up from the workforce, so that we have the right information to make decisions with.

Leadership fundamentals, how we interact with the workforce in a constructive, facilitative environment such as they feel free to bring concerns forward.

Equivalent reliability at ANO. This is not only to implement the nuclear strategic plan and many of the capital and O&M investments that we're making in the plant, but it also includes our focus as a site leadership team on utilizing the work management process to be in control of the day-to-

day work, minimize the emergent equipment challenges that Mr. Kennedy spoke to, and be predictable as go forward in the day-to-day maintenance and work activities.

And finally training. Not only to strengthen the training programs to improve the performance of the site, to train the new workforce and improve the proficiency of both the workers and the leadership team, but improve the -- it will also focus on improving the operations and maintenance fundamentals. We're taking lessons learned from the fleet in the second half of 2017 to implement high intensity training for our operations personnel, much like some of the other Entergy stations have done to make a step change in performance within our operational group performance.

As I said, these focus areas encompass and complement the existing Comprehensive Recovery Plan, to ensure that we address all of the items in the confirmatory action letter. They also complement the fleet strategic plan that Mr. Bakken talked about. Since execution of this plan is our priority, the site has also taken actions within recovery to align and engage the organization.

We've engaged both of the unions at the site. They're fully integrated into our activities and full supportive of leading ANO back to being one of the leaders in the industry. Our IBEW workforce has implemented a national program referred to as the Code of Excellence training, where they reinforce professionalism, accountability, respect and team work, and quality of their work, so that we have first time quality whenever we touch the equipment.

We strengthened our communications strategies. We have strong personal accountability reinforcing the safety culture attribute of personal accountability, both for raising issues and for taking accountability for the site.

Training to improve leadership and safety culture skills. The delayed completion date on the One CAL Commitment (phonetic) that Mr. Kennedy spoke about is when we looked at what we had planned for safety culture training. We recognized to really be fully effective, we needed to spend a much longer time in that training than what was originally planned.

So we took advantage of that, and while it did impact the CAL due date, we believe that the training we're conducting is much higher value and will get us a more sustainable result in the end.

We're improving the decision-making behaviors and engaging the entire line organization in making decisions, and utilizing cross-functional teams, such as the communications advisory team. So we hear what the employees are interested in and we utilize them to make that sure our messages are clearly understood and effective.

Actions have also been initiated to improve the effectiveness reviews and develop additional measures to monitor improvement. Again as Mr. Kennedy spoke, when we laid out the plan, we had not identified what metrics we would move with each of the actions within our plan.

We've regrouped, we've established those performance indicators. We're monitoring them on a week to week and month to month

basis to ensure that we maintain effectiveness.

We strengthen the effectiveness reviews within the site leadership team, now that they own implementation of the Comprehensive Recovery Plan, they are the ones that are going to challenge each other to be fully effective. In addition, we've strengthened an external effectiveness review challenge board that we go through with each of our actions, and ongoing sustainability of the previous actions that were completed each month as we go through, prior to presenting new actions for the NRC's inspection.

Out of the last inspection, we submitted 28 for inspection and 27 were deemed to be effective, with one needing additional run time to ensure the sustainability, so then we will track that.

So good progress has been made by the ANO team this year. To date, 133 of 161 items have been completed, as Mr. Kennedy said, and about 46 percent of our overall CAL actions have been deemed to be effective for closure by the NRC. The site continues to assess the effectiveness of the CAL items through the processes we have in place, and ownership of the recovery plan by the line management is key in engagement of the workforce.

With these, the site will continue to drive performance forward and achieve sustained excellence warranting closure of the CAL.

Next slide, please. No, one more please. So at ANO we are committed to safe and reliable operations. Our top priority continues to be operating the plant in a safe, conservative and deliberate manner. We will not waiver from this commitment through our time and operation.

During the Unit 2 refueling outage, which is currently underway, we've made significant improvements and investments to our plant to help contribute to the overall recovery as a station, including equipment reliability and improved safety margins. We've replaced large components such as component cooling water heat exchangers, and both of our shutdown cooling heat exchangers.

Additionally, we've upgraded one of our diesel generator governors and replaced a significant portion of our service water piping that we found was beginning to degrade. During the Unit 2 outage, the site was also challenged by an unplanned outage on Unit 1, when a tornado came through the area and our operators manually tripped the unit based on indications they had on the control panel.

However, even though we had both units down, the site took an opportunity to reinforce conservative decision-making and decided to address several equipment issues that we couldn't have run with through the operating cycle, such as the reactor coolant pump seal and one of our nuclear instrumentation that would have been acceptable to run the cycle.

But we felt it was prudent to take the time during this forced outage to go after and restore those items to high levels of reliability. ANO will continue to implement our Comprehensive Recovery Plan with quality. We'll continue to take learnings from the industry, our own root causes and apparent causes, the NRC and other external stakeholder feedback to improve performance.

It's also key that we continue to engage and leverage our

staff at all levels. This will gain their commitment and engagement in the plan, and make our actions more sustainable in the future as we continue to drive performance forward. As a result, our improved safety culture and conservative decision-making will create safety margins for the plant.

We are committed not just to exit the confirmatory action letter in Column 4, but return ANO to being one of the industry's strongest performers for this generation of leadership and in the leadership generations behind us.

Thank you again for this opportunity to provide an update on ANO's current performance and the status of our recovery plan actions moving forward. Just one other comment to address Mr. Kennedy's statements. The white finding on the diesel generator, we do expect to tell the NRC that we'll be ready for a third quarter inspection.

We've completed the root cause analysis, corrective actions and we are in final validation and verification of the effectiveness and completion of those to be able to make that notification. That concludes my comments.

CHAIRMAN SVINICKI: Okay. Thank you very much for that presentation. Once again for this round of Q and A, I will lead off. I thank you for your presentation. By my count, if it's accurate, this is my tenth Commission meeting on the agency action review. Early in my time here, I wasn't sure, given the fact that this meeting is just one component of the NRC's response to degraded safety performance at licensees.

I wasn't sure of the specific purpose of this meeting, but I've

come over the course of time to realize that the expression by licensees in this meeting in a very public way that their commitment to taking the actions that are needed to improve in the case of reactor station performance, making that real and public has a certain power all its own.

So I appreciate your being here today to restate your commitment to taking the actions that are needed at ANO, and this is a uniqueness, because we have the same licensee for the next panel as well. So I'll just make some general remarks here and maybe ask for a reaction about how you've approached this issue for both ANO and for Pilgrim as well.

There are other benchmarks that if a station finds itself in the degraded performance category, you can look to other reactors in the fleet. You are fleet operators, so you can look within your own fleet. But as important as leadership expressions of commitment are, it's my view also that that's important, but that the behavior that leads to safety, the conduct, the actions, it begins and ends with your individual station employees.

I don't think it would surprise anyone for me to observe that I think some of just the culture in Arkansas and Massachusetts are probably different. So I'm also of a view that although you can look across the U.S. fleet, you can look within your own fleet to what are the specific actions that are going to drive improved performance.

There isn't really a template that's a one-size-fits-all. I do think that the actions need to be tailored to the culture of the station itself. So I might ask in general as you looked outside of your own station for best practices in the measures that would help you make an improvement in

performance as effectively and efficiently and probably as rapidly as you can.

I'm sure that's part of your goal, how do you balance that against just the overall atmosphere and culture at an individual station to arrive at those things that will get you where you need to be in the most effective way?

MR. ANDERSON: I'll start with that. As we did the benchmarking, and that was one of our initiatives that our site was fairly insular, and we had not benchmarked outside of our fleet. So we did embark on a comprehensive benchmarking plan in 2016. We continued that in '17 and '18 going forward.

We did find that across the fleet as we benchmarked within the fleet, items such as maintenance fundamentals and operations fundamentals, there were good programs within the fleet that we could leverage through the use of an EPRI bolding trailer, fundamental maintenance exams to see where there may be gaps in the maintenance work practices, and building our training programs to go target those.

Similarly, within the operations area, Grand Gulf, another station in our fleet had developed high intensity training to raise the performance on operating crew fundamentals. We were able to deploy that as it fit very well with the culture and the framework at our station.

But I would say that maybe where some of the differences are, we do have a very unique workforce. I believe that ANO, from what I've seen at the other sites I've worked at, they very much recognize the value of ANO to the community, to the state and then as Chris said to the Entergy

Corporation, and they know that that is -- the plant success leads to their success.

So they're very much committed to the mutual success and it's not an "us and them" kind of environment with the workforce. So when we went to them with some human -- some of the human performance trends that we saw late in 2016, they benchmarked externally to ANO and did pick up on the international or the national program within the IBEW for the Code of Excellence.

It did fit very well because it was a strong contingent without the workforce that wanted to have ownership for their own performance. They on their own delivered the Code of Excellence presentation to every one of their members, and when they realized the value and it wasn't just a talking head kind of presentation; it was a very heartfelt sincere presentation by the senior levels of the union leadership.

We invited our NRC inspectors, other personnel at the site to participate. They ended up giving that presentation to the entire team, non-bargaining unit personnel, the management team. They invited all of the other unions that provide contingent workers at the workforce, whether they're boilermakers, pipefitters, other electricians, because they wanted to -- they realized that everyone's performance reflects on the workforce performance of the plant, and they went around the clock to catch workers on all shifts and continued it until they were certain that they had nearly everyone on site do that presentation.

We do continue the other external benchmarking, and with

our fleet processes, if we find a good practice at a site outside of the fleet, we have the ability to pilot that under a pilot fleet process. We'll evaluate the effectiveness of it, and then if it's effective we roll it in through our peer groups to expand that across the fleet.

MR. COYLE: Just if I could expand on it. Larry Coyle by the way, chief operating officer. Great to meet you Chairman and Commissioners. Just to expand at the fleet level regarding the external feedback, etcetera. We began a journey a year ago. Chris came on board, Rich in position, me in position. It was key to make sure if we were going to have operational excellence, really world class, we need to make sure we got that input from a host of individuals.

From INPO, Institute of Nuclear Power Operations, from the best of the best in the fleets, Exelon, Duke, Nextera, Southern continually. We've made sure that we ran our plants, our focus, three focus years of plant processes and people, and made sure we got the feedback from them as we continue on the journey of what's the best of the best, modifying our plants, taking the best of the best.

So engagement is huge at this site. It's really engagement from this leadership team at this level, to make sure that we look across the United States, get the best of the best, and make sure we take the best, modify our plans moving forward. So we're really looking for operational excellence from us and taking the best of the best from the rest of the industry is really continuous learning at our level.

CHAIRMAN SVINICKI: Okay, thank you very much.

Commissioner Baran.

COMMISSIONER BARAN: Well thanks for being here and for your comments. On the last panel, Chris Kennedy reported that over the last year, ANO has focused attention on improving equipment reliability through repair and maintenance, as well as on improving the corrective action program.

How would you assess ANO's progress in the area of proactively identifying and resolving equipment reliability issues?

MR. ANDERSON: I would say we've made significant progress over the last year. We have identified a list that we refer to as our Nuclear Strategic Plan. It's really our five year business plan on capital replacements and improvements. We're purchasing new capital spares. For example, the shutdown heat exchanger project, even though it was a very expensive and difficult project to remove two large heat exchangers from the basement of the aux building, we fast-tracked that project and safely completed that and restored those heat exchangers to operable status during this outage.

We have a fully funded plan out for the period of our nuclear strategic plan that completes a number of large equipment replacements. But with that, there's also the day-to-day maintenance. We're continuing to do system vulnerability reviews. We completed a service water system self-assessment and identified several key findings within that ourselves.

We were going after addressing those and applying those to the other systems. We're looking at programs such as relief valves and

snubbers and others, and finding what the best in the industry do there and applying those. That has resulted in significant additional work during the current outage that we're in.

We continue to apply those to other programs and systems, and we have a plan that we've expanded out for several years, to make sure that on a routine ongoing basis we're coming back and evaluating the effectiveness of those programs and systems.

COMMISSIONER BARAN: So I think that covers well the kind of capital investment piece of it. What about the kind of operations day-to-day, really grappling with issues, you know, as they're coming up and resolving them in a permanent way as opposed to deferring things or kind of getting through the day?

MR. BAKKEN: If I could, I'll answer the question on a more global level for our fleet, and then Rich perhaps can touch again on the site level. One of the things I found when I joined the company about a year is we were very production focused. We also were a lean operator. So we had a focus that predominantly was on fixing things as opposed to replacing them, short on resources.

So you hear us talk a lot about money and people, as we have a dialogue with you and your team. But I think it's a really important signal to our team that we're looking to invest in the plants, we're looking to continue to improve them. We're adding resources where appropriate to use them wisely, looking to shift the culture and the thinking and the people.

One of the things that we've been very heavily focused on

as we use the language "fix the plant." But we want to make sure that the plant has the correct safety margins and runs reliably, and we've taken several demonstrative steps through the course of last year across the fleet to show that the production focus has shifted to being safety-focused.

We've taken units out of service. We've shut down to fix things. Probably the most demonstrative thing we did was to take Grand Gulf out of service for four months, because we weren't comfortable with the way the plant was being operated, to be direct. So those things send very, very clear signals to our workforce.

We constantly need to reinforce them, because we're working to shift the cultures. Cultures are built over years and years. They don't shift overnight. But we're looking for every opportunity to reinforce what I like to call safe, conservative, deliberate operations. That message is starting to sink in across the fleet.

COMMISSIONER BARAN: And ANO staffing levels, as you mentioned, were a concern that was discussed at last year's meeting. Has staffing levels increased over the past year?

MR. ANDERSON: Yes, they have. In 2016, we identified some critical positions that needed to be hired immediately. It was about 44 positions, and those were brought on in the fall of 2016. We looked further out using two staffing studies that were conducted and I believe were discussed here last year, to identify a roughly right targeted population for ANO.

We approached that in two ways. We immediately brought

in some supplemental workers to fill positions that needed to be immediately filled with competent individuals, such as in engineering and some of our projects, and mentors within Operations. Then we identified what it would take to get back to the staffing levels that we believe a high-performing plant with sustainable levels of performance would take, and we prioritized that over a three-year period.

It's just a number of people of people to recruit, hire, assimilate them into your organization, get them trained we saw as a challenge. So we did levelize that over three years, focusing primarily on the pointy edge of the spear, where the operations and maintenance people and engineers that actually touch and manipulate the plant get hired first, along with the supervision and training staff, to be able to bring them in.

Then the support organizations, some of them are out further on. Recognizing that hiring a new workforce like this, oftentimes you get a mix of people, some inexperienced and not proficient in their roles. We have additional supplemental resources in the form of mentors and experienced people that come back to make sure that they understand the responsibilities, work with them transitioning into those roles, so that we can quickly bring them up to the right level of proficiency and performance.

COMMISSIONER BARAN: Thank you.

CHAIRMAN SVINICKI: Thank you. Commissioner Burns.

COMMISSIONER BURNS: Well, thank you again for the presentations, and I think you all talked about and I think the Chairman

touched on this dynamic between a fleet-wide but also site-specific performance, and also concentration in terms of making things better. Maybe I can paraphrase Tip O'Neill and say "all operations are local."

But, you know, in the same way for the fleet, it does help in terms of the performance, you know, fleet-wide. That's what's critical to with, you know, putting all kidding aside. But maybe I can ask two questions and one thing, and maybe to you Chris and it goes this.

What do you see as the biggest challenges or hurdles in terms of the improvement in the fleet-wide performance that you're looking at? You touched on it a little bit at the beginning of your presentation.

MR. BAKKEN: I would say there's two key tenets to it. The first quite frankly is leadership. As I said, we were a lean operator. We did not have the depth and ready-now succession planning candidates to reinforce some of our sites when they started to have difficulties.

So that is a difference from other fleet operators who have a pretty strong inventory of people that can step into roles when, you know, the workload starts to pick up and you need to have additional management and leadership focus. That is something that takes time to correct. We've done a fair amount of outside hiring. There are several outside hires, you know, Rich here today, Chris, to come shortly.

But that depth of talent and the preparation, the succession planning and the ready-now candidacy, that is something that we are very focused on improving, because I believe that's at the core of our ability to sustain excellent performance. I guess clearly we need enough numbers of

people to physically do the work as well. Where were lean, you know Rich, I think you're adding about 100 people this year if my memory's correct, just to give you a sense of scale.

The second piece is equipment. We have got to get the plants in the position where they are predictable, reliable and have the proper safety margins. We have a number of areas across our fleet where we did have strategies that were focused on repair. We're now shifting to replacement where it's appropriate and making those investments.

Ultimately, that shows the plant and the operators that, you know, we're doing what we said we would do. We're improving the equipment that we're expecting to operate and maintain, and those are very visible changes in the sites. When we make those changes, they have a very significant impact on quite frankly the morale and the commitment and the engagement of the employees.

So for me, it's about leadership and it's about our ability to get the equipment to be predictable and reliable.

COMMISSIONER BURNS: Okay, thanks. Mr. Anderson, in terms of looking at where you are and in terms of the recovery effort, what do you see as perhaps one of the biggest limit or one of the biggest hurdles in terms of coming through and finishing strong on it?

MR. ANDERSON: I'd say right now one of the biggest hurdles is the assimilation of the additional people in the workforce. Getting their full qualification proficiency and alignment as a team, to be able to move the station forward. We have all of the funding and support that we need from

the corporation and the pre-organization, good challenging and governance and oversight as we rebuild the fleet organization.

But I think it's just a matter of regaining the strength within the workforce, and being able to move forward with them.

COMMISSIONER BURNS: Okay, and I guess, you know, for you and for ANO being at the other end of the process, Pilgrim more -- any counsel or advice? I'm sure you are giving counsel and advice, as you might offer your colleagues.

MR. ANDERSON: There is, and I benefitted from the advice of others in the fleet, such as River Bend and Palisades and, you know, clear line of sight from what the workers do to the success of the station. The employee engagement and ownership by the line organization I would say are the -- are probably the keys I would pass along.

COMMISSIONER BURNS: Okay, all right. Thank you. Thank you, Chairman.

CHAIRMAN SVINICKI: Okay. We will now reset the panel for Entergy Corporation. I believe two of the participants here will change to reflect presentations regarding Pilgrim. Thank you.

(Pause.)

CHAIRMAN SVINICKI: Well thank you and welcome. So again, I will turn the presentation over now to discuss the Pilgrim Station.

MR. BAKKEN: Chairman, I have no additional opening remarks. So I'll hand off the presentation to Brian Sullivan, site vice president.

MR. SULLIVAN: Thank you, Chris. Chairman Svinicki, Commissioner Baran, Commissioner Burns, thank you for providing us the opportunity to discuss Pilgrim's recovery efforts from Column 4, and our plans to return the station back to regulatory oversight.

As discussed previously, you know, we have reviewed the inspection report that we received. We've taken actions to revise our Comprehensive Recovery Plan, to increase the focus and scope of the recovery efforts that we're taking, to address the overall performance improvements that need to be made in leadership, operations performance, use of subject matter experts and improvement in our corrective action program and procedure use and adherence.

Next slide. Next slide. We're committed to safe and reliable plant operations. So here's what I really want to get focused on in my presentation, is the site's focus on safe plant operations and people, because I really believe that that's what we need to do to continue to operate safely through the last cycle of operation at Pilgrim Station.

Drawing on my experience from FitzPatrick Station, where I was before I came to Pilgrim, we experienced a plant decommissioning announcement, where we had to go through decommissioning plans and deal with a lot of the same challenges that I'm faced with at Pilgrim.

In addition to the decommissioning challenges at Pilgrim, we have to deal with the 95003 inspection results, and we have to continue to implement our 95003 Comprehensive Recovery Plan. In the area of safe plant operations in this past outage, the company invested significant

resources in repair of the plant.

We replaced traveling water screens, replaced our circulating water pump motor, replaced the turbine lube oil pump motor, replaced the reactor feed pump motor, did extensive work in our drywell to improve cooling and ventilation in our drywell, as well as extensive work on our condenser.

When we entered the outage, we had degraded condenser performance. Through a strong technical conscious, rigorous engineering, we identified that the air entrainment section had significant degradation. Took actions to repair that. Repaired the condenser and upon startup of the plant we're currently operating at the one of the lowest air and leakage rates in our fleet for a boiling water reactor, and one of the lowest in the industry for a boiling water reactor as a result of making those repairs.

As we move forward out of the outage, there's a couple of measures that you have on how well the plant's working, how effective your outage was. A couple of key things are the number of steam leaks that you have. We currently only have one active steam leak, which is a pretty tight plant in my history at a boiling water reactor.

We also had very low drywell leakage, which is another indicator that we've performed the right maintenance. The plant's continuing to run safely. With that being said, we have to challenge moving forward. Drawing on my experience from FitzPatrick going through similar evolution with decommissioning, we have to make sure that you're focused on maintaining the plant.

I would oftentimes be asked by -- whether it was by the NRC or by INPO or by others, how do we know that you're not running the plant into the ground. Or the question would come out differently, how do we know that you're maintaining safe plant operation? I would always point to two key indicators. One was our maintenance backlogs, which at FitzPatrick when we made the announcement to shut the plant down, we're in the top decile range.

Stayed in that range through most of the cycle except when we had plant transients and backlogs would go up a little bit, but we would drive them back down, and around the time that we announced that we're going to continue operation, our backlogs were still top decile. When we went into the outage, we maintained our backlogs very low.

Another indicator I would report, I would point to would be our work maintenance readiness indicator. It's an indicator that shows different stages of the work control process and maintenance process over a 28 week period. It really demonstrates -- it's an indicator that tells you are you ready to do the work that you need to do.

It's also collegially referred to as the quality of life indicator. If you're maintaining that indicator and you're preparing for your work, your work weeks go much smoother, you're working on the right equipment, coupled with low maintenance backlogs is a clear indicator. In my mind, though, it's the two high level indicators I use to demonstrate safe plant operation.

I've challenged my maintenance manager, my maintenance

-- senior maintenance manager and maintenance staff to get our backlogs to top decile, get me a plan to do that and I'll make sure that resources are not the challenge. I have the full commitment from Chris and the Corporation to maintaining the plant, to have the monies that we need to maintain and operate the plant safely.

A couple of learnings from FitzPatrick. While well-intentioned at times, people get the itch not to do something because the plant's only going to be running for another two years, and you have to continuously guard against that and ensure that any decisions are technically sound if you're going to make a decision not to do work.

At FitzPatrick, we demonstrated that commitment by performing maintenance on one of our emergency diesel generators, which was to change a turbocharger out. Large capital, large capital investment. It could have been deferred. We opted not to defer it. Emergency diesel generators, as you are aware, are a significant contributor to risk.

We made that decision. We were adequately funded and supported by the corporation to perform that work.

Moving to the area of people, and again I believe that people health has a direct correlation to safe plant operation. In my experience at FitzPatrick, what I learned was that you have be open, frequent and transparent with communications to people on what the company's doing and what our plans are for people post-shutdown.

I found that people fall into three categories. Folks that are close to retirement have one set of needs, folks that are at the beginning of

their career have another set of needs, and the folks that are the most difficult really are the ones that are in the middle, because there's not enough time left for them to start a new career. So they want to remain with the company.

Things that we did at FitzPatrick, we took learnings from Vermont Yankee. In their shutdown, they held a job fair. We implemented that same recommendations with improvements and learnings from Vermont Yankee, to have a job fair at FitzPatrick. We brought up members from every one of our nuclear plants. We brought from the Big E -- from the T&D side of the company brought folks up to identify their and talk through the demographics their needs for employees, so that employees that were in that middle knew that there were jobs for them, knew that there were opportunities.

They may have to move to take advantage of those opportunities, but they knew that they were there. The other thing that we learned from Vermont Yankee was it was important to bring spouses up with the members that came up from the other parts of the company.

So that our employees came with their wives and children and grandchildren in one case, to talk about -- to talk about the areas, talk about churches, social activities, schools, you know, where do you live? What are the communities like?

It was very beneficial, and probably one of the best things that we did to help with that transition for people and help keep that people health positive. We plan on doing the same thing at Pilgrim, and we currently have it scheduled for the October time frame, in order to engage that people health component.

For the people at the younger end of the spectrum, at FitzPatrick what we found was a lot of the folks weren't from the area, and they started leaving early, started impacting our Operations Department. At Pilgrim, our Operations Department is currently fully staffed. We're on a six watch rotation. It's a very healthy staffing for an Operations Department, whether you're running or you're shutting down.

So that gives us an advantage at Pilgrim. It's a different area. People are from the area, so that population of people have a different set of needs than the folks up at FitzPatrick. They're looking to stay in the area.

So while we will identify employment opportunities for those folks within the Entergy Corporation, I'll also be working with my peers at Seabrook, down at Millstone. Outside of nuclear, I'll be working with New England ISO, be working with Eversource folks that have come and employed our folks before and recruited our folks, because we have a highly educated, highly skilled knowledgeable workforce that people value.

I want to transition now to external stakeholder involvement and engagement, a focus that I have for my leadership team and myself is to improve external stakeholder involvement and engagement. I'll start with the nuclear decommissioning community action advisory committee meeting, and I probably messed up that acronym.

But that committee has recently formed. We have representatives on that committee, and they've had a recent meeting within the past month and we plan on staying actively engaged in that meeting. The

goal -- my goal for my team is that it be transparent and communicate with the community to let them know what our plans are, and provide an avenue for them to raise concerns and have us address the concerns in a public forum.

I've also taken an initiative to meet with local representatives. This past week I met with two state representatives in Senator deMacedo's office in Plymouth. I plan on doing that regularly, meeting with politicians, as well as meeting with local politicians from and selectmen from the Plymouth area.

I feel that that's very important. The relationship here with the community in the Boston area and the Plymouth area is far different than where I came from up in New York, and it's very important that we maintain those communications open and transparent. That concludes my remarks, pending any questions.

CHAIRMAN SVINICKI: Well thank you very much for this presentation focused on the Pilgrim site. Let me begin with this question. The NRC staff panel presented their observation that at Pilgrim, Entergy had identified the right problem areas and identified the right causes, but that corrective actions were not sufficient in focus and depth needed.

As a result, the recovery plan is going to be -- or is under revision. How will you approach this revision to the recovery plan, to widen the aperture and to address the focus and depth issue that the NRC staff identified? How will you do that? What will be your approach this time to find the right spot there?

MR. SULLIVAN: Excuse me. My approach will be to

integrate the recovery efforts deeper into the Pilgrim Station team. Right now, my observation is that the recovery efforts are functioning not independently but off to the side, with oversight from the station staff and those recovery efforts need to be integrated into the station organization.

Until we do that, we're not going to fully recover and fully understand, you know, the recovery efforts that are needed. We need people to embrace what needs to happen. They need to own the results and they need to feel accountable for the results. In a recent -- it was yesterday, we had a fleet staff meeting with Chris and Rich Anderson talked about, you know, what they did at ANO and how they integrated the team.

When did that, that's when he saw the real recovery start to take hold. So that is the plan. That is what I plan on doing differently.

CHAIRMAN SVINICKI: Okay, thank you, and just a point for my own awareness. I'm sure I could look this up and I don't know the acronym for the Decommissioning Committee either. But is there representation of the station's labor, like the locals and things? Are they on that? Okay, okay. Is that more than one member of the Committee?

MR. SULLIVAN: Right now, I know of one.

CHAIRMAN SVINICKI: One. Okay, all right. Thank you. That was just for my own information. Commissioner Baran.

COMMISSIONER BARAN: Thanks again for being here. On the first panel, Dan Dorman provided his assessment of how things are going at Pilgrim. Is there anything from his presentation that you disagreed with or thought was unfair?

MR. BAKKEN: No, nothing. We've had a quite lengthy conversation with Dan and his team and in particular on a personal level, I sat with Dan for probably an hour and a half or so, to make sure that we were very, very clear in understanding the principle areas of concern.

There were no questions in terms of things that weren't understood. So I believe we have a very clear understanding. I think, you know, the 95003 inspection team was a very strong team. They found a number of good issues. We're incorporating them into the CRP, and I'm sure over time, you know, the agency staff will look at our actions.

I do say, I want to echo what Brian said. One of the key learnings that we found is that we cannot delegate the responsibility for the recovery plan to people outside the line organization. The line organization has got to own the recovery plan. I think that's an important shift.

The other point I would make is that we also felt that it was appropriate, and nothing against the leaders that have led the recovery to this point. But I think it is time for a shift in leadership, a fresh set of eyes to lead the next step of the recovery, and I think that’s why Brian is sitting here.

But there's no difference of opinion at this point, and I believe we have a clear understanding of the issues.

COMMISSIONER BARAN: Chris, as you mentioned earlier, when Grand Gulf had significant operations issues, you decided last September to temporarily shut the plant down until the problems were addressed. I appreciate how you approached that issue with a real safety focus, and I imagine it wasn't an easy decision to make, to have the plant

offline for several months.

I mention that because in my mind you've shown an ability and willingness to take a hard look at weaknesses in plant operations. How confident are you that the operators at Pilgrim could put the plant in a safe condition today if the plant were to experience a challenging event or adverse operating conditions?

MR. BAKKEN: We and I are very confident that they will do exactly that, or they would not be running. Maybe watch the plants, each of our plants, very closely. We have quite detailed discussions when they have operational anomalies. If we get the point where I have lack of confidence in our ability to do that, we will take the station out of service. It will not be you that has to do that.

COMMISSIONER BARAN: What are you on the lookout for that could change your assessment?

MR. BAKKEN: The key things that I look for is did the operators understand what was happening, and did they respond in a timely and effective manner? So it's understanding and response being timely and effective. If we start to see an inability to do that or to understand that, that's when we will start to act. Those are probably the key things that I'm watching for.

COMMISSIONER BARAN: On the first panel, Dan and I were talking about the tension or apparently tension between NRC's confidence that operators will take appropriate actions to put the plant in a safe condition, and the conclusion that the Operations Department is

struggling in several important areas.

What is your assessment of the ability of the operators at Pilgrim to operate the plant with high standards on a day-to-day basis to ensure safety?

MR. BAKKEN: The way Dan described it I actually think was very accurate. Brian's task really, I'll use slightly different words than Dan did, I believe they're competent to operate the facility. Where we need to improve is our ability for the operations team to lead the organization, and make sure that the sense of discomfort that they have is if plant components aren't work quite right, that the organization responds with the appropriate vigor.

The other piece where we need to do, I believe, a good bit of work is to continue to improve their ability to effective review operability determinations. That can at times be a complex process, you need to rely on other people. But ultimately it is the senior reactor operator, shift manager, that's responsible for that process.

We've not demonstrated full competence at that, and I would say the operational leadership and the ability to effectively execute operability determinations, those are key focus areas for Brian and the operational team to improve.

COMMISSIONER BARAN: Do you agree with that Brian?

MR. SULLIVAN: Yes.

COMMISSIONER BARAN: Chris, have you seen overall an improvement in operations standards during the past year?

MR. BAKKEN: Specific to Pilgrim?

COMMISSIONER BARAN: Yes.

MR. BAKKEN: Yes, I have. I can see that on a number of fronts. What I've seen is a more conservative approach to plant operations, a willingness to take the plant out of service to fix things, and we have in one case where the operators manually tripped the reactor, I had some discussions with a number of the SROs involved and they felt supported in their decision and didn't hesitate to take it.

So it's those types of things that tell me that the culture is shifting. Each time I visit the site, I tend to run in and talk to the SROs, getting very strong feedback from them. They feel supported to take conservative action, and to me that's a huge part of the safety culture that we need.

COMMISSIONER BARAN: Thank you.

CHAIRMAN SVINICKI: Thank you very much. Commissioner Burns.

COMMISSIONER BURNS: Thank you. Mr. Sullivan, I appreciate, you know, the overview, both of the efforts that the plant is undertaking to improve performance, improve operations, but I think also want to highlight and just maybe focus for a minute or two what you talked about in terms of engagement with the community.

That with all kidding aside, I actually have a clipping service up there who sends me things from the *Marshfield Mariner* and other papers and i.e., my mother. It's actually good because she's better than our clipping service in terms of -- in terms of really local papers, but in terms of getting

some of the local papers.

But I think all kidding aside, I think you sort of touched on as you, you know, it's extraordinarily important and probably of primary importance the things that you and Chris talked about, in terms of focusing on improving performance and also support for the station.

But again, I think I'm encouraged in terms of your comments with respect to the intents to engage, and you've got an interesting dynamic because both between, you know, concerns you may have in the local community about operational performance, but also you're already in terms of this transition, you know, looking down the pike in terms of the transition into the decommissioning state.

Just another point of information I'd be interested in in terms of this decommissioning committee. Is that a state-established or like a Town of Plymouth-established or do you know? You may or may not know.

MR. SULLIVAN: It's state-established is kind of my recollection, but it's a recollection.

COMMISSIONER BURNS: Yeah, okay, okay. Well that's fine. But again, I would, you know, my encouragement was -- is to keep, you know, keep that type of engagement up, because I know historically and I've been around here long enough and I remember some of the difficulties the plant had in the 1980's and sort of the community engagement.

I think some of the folks are still the same folks who were engaged back in those times that I know. So again, I think that's an important aspect, and I encourage you on that.

MR. BAKKEN: Thank you.

CHAIRMAN SVINICKI: Well, I thank the Entergy presenters of both panels, and I will bid you adieu now and excuse you, and we will ask the table be reset for the Westinghouse panel. Thank you very much.

MR. SULLIVAN: Thank you.

MR. BAKKEN: Thank you.

CHAIRMAN SVINICKI: Well, as you take your seats here, again this is our final panel of this Commission meeting. We will hear now from Westinghouse regarding the status and the response to the events at the Columbia Fuel Fabrication facility, and is it Mr. Weaver? Will you be leading off? Please proceed.

MR. WEAVER: Okay. Good morning Chairman Svinicki, Commissioner Baran and Commissioner Burns. I'm Doug Weaver. I'm the Westinghouse vice president of Global Nuclear Regulatory Affairs. With me today are the Westinghouse leaders responsible for the Columbia Fuel Fabrication Facility. I have Mike Annacone on my right, who is the site vice president and Michele DeWitt, who is the senior vice president of Nuclear Fuel for Westinghouse. Our fuel facilities in the United Kingdom and Sweden also report to Michele.

We appreciate your time today, and look forward to sharing with you the safety improvements we have made at Columbia and continue to make at Columbia.

Next slide, please. One more. Okay. We recognize

that the decision-making and performance that led to the significant accumulation of uranium in the S-1030 scrubber were unacceptable and did not reflect our high standards for nuclear safety. Westinghouse understands the significance of this occurrence and in particular the potential consequences to our own employees.

We have taken and will continue to take a wide-ranging set of corrective actions that consider the lessons learned from this event and are designed to ensure a large safety margin between normal operations and our criticality safety limits.

Last August, Westinghouse sent Mike Annacone to the site to lead our recovery efforts. At the start of those efforts, we submitted an expensive set of restart and post-restart commitments that the NRC placed into a confirmatory action letter. Over a period of three months, we completed the restart commitments in the confirmatory action letter, and after the NRC inspected our actions, we obtained permission to restart.

As part of those commitments, we completed a thorough root cause analysis of the event. Michael will explain the corrective actions resulting from the root cause analysis in more detail. As I mentioned previously, Mike is now the site vice president at Columbia. Under his leadership, the site is continuing to complete the post-restart corrective actions, and is implementing a facility excellence plan to improve performance and drive towards excellent and sustainable operations. We are committed to consistently safe and reliable operations at Columbia.

I also wanted to quickly mention that we are working through

the -- with the staff through the alternative dispute resolution process to resolve the outstanding enforcement actions associated with the scrubber event. We are confident that our discussions will lead to a positive outcome.

I will now turn it over to Mike, who will summarize the corrective actions completed to date and describe the remaining improvements for Columbia. Mike.

MR. ANNACONE: Thank you for the opportunity to meet with you today to discuss this important event, to share our learning and the corrective actions and answer your questions.

Next slide. This was a watershed event for us, one that must result in significant sustained changed. We were fortunate in the fact that there were no consequences to our workers or the environment from this event. This event did, however, raise significant questions regarding trust and confidence in our operations, from our employees, from our company, our customers and you, our regulator.

We are intensely focused on rebuilding this trust by delivering results. To achieve this end, with the assistance of industry experts and operating experience, we have carefully developed the comprehensive set of corrective actions to ensure the safe restart of the facility, to address gaps in the implementation of our criticality safety program, and to apply their learning broadly across all of our safety disciplines and operations.

While shutdown, our corrective actions address the safety basis of the S-1030 scrubber and all wet ventilation system scrubbers. We

developed and implemented a methodical, consistent, well-documented approach to revalidate the safety basis of these scrubbers, and to validate the effectiveness of the implementation of all items, administrative items relied on for safety.

We implemented extensive fiscal modifications aimed at reducing the potential for material carryover to the scrubber, to improve ventilation system inspections and to reduce the ability for material to build up in the scrubber itself. Notably, we modified the packing arrangements from loosely stored packing media to packing basket arrangements.

This allow scrubber liquid from the inlet area and the packing media to flow freely to the body drains in the scrubber. We also added inlet spray flow and began dilution of the scrubber liquid. Since restart, we've completed four full inspections with very favorable results. Currently build-up rates extrapolated over one year result in approximately 1.2 to 1.4 kilograms of uranium against a limit of 79 kilograms of uranium.

The pictures on this page show the conditions inside the scrubber on our last full inspection completed approximately two weeks ago, after 13 weeks of in-service time. Our new inspection processes provide detailed steps to ensure repeatable outcomes, to explicitly define acceptance criteria, and to effective integrate reviews and approvals by our criticality safety experts, to ensure that the safety basis is preserved during this activity.

Recognizing that the effectiveness of our configuration control processes in preserving safety margins was one of the root causes of this event, we engaged personnel independent from my organization with

design engineering and criticality safety expertise, to review our work products and to conduct challenge sessions to ensure the accuracy and rigor of the changes that we made.

Lessons learned training deployed a case study approach, using this event along with historical events at my facility and another fuel cycle facility, to emphasize common nuclear safety culture themes, and to reinforce the need for fundamental sustained change to improve our ability to learn from these events.

An important opportunity we took during this training was to elicit worker feedback regarding their views of the current state of our nuclear safety culture. We've informed our nuclear safety culture monitoring panel and excellence plan actions with this information.

Next slide. A healthy nuclear safety culture is the foundation of our improvement effort. The gaps identified by our root cause analysis and through the development of the scope of our overall excellence plan tied directly to the health of our nuclear safety culture. These gaps influenced both the values and the behaviors in the organization, as well as the rigor and effectiveness of our programs and processes design to support a healthy safety culture.

We've completed many actions to improve. This slide identifies some of the most important but not all actions taken. We've implemented a nuclear safety culture monitoring panel using nuclear industry guidance, and shaped by benchmarking and feedback from external consultants from our company's external Nuclear Safety Review Board.

In recognition of the early stages of the culture change that we're on, our charter identifies the need to have independent oversight on the conduct of our panel, to ensure that we're being sufficiently self-critical.

We've recently completed an independent third party assessment of the current state of our nuclear safety culture, using an organization with significant experience in the operating nuclear industry in assessing safety culture.

As you would expect, several gaps were identified. What is important to note is that this independent team noted in the executive summary of their report that our nuclear safety culture monitoring panel effectively self-identified most of the gaps noted by the team. Our ability to self-identify gaps is one of the most important aspects of our performance improvement journey. This was a positive first steps in an essential area of performance.

Early learning in our journey was also recognizing that our management systems directly impact and shape our safety culture. Discussions related to safety culture often focus on solely on the behavior side. The effectiveness of our processes and how they influence performance and critical traits such as questioning attitude and decision-making were not recognized as impacting the health of our safety culture.

Completed actions related to our processes and programs are focused on improving configuration control, self-identifying and correcting our problems, strengthening internal and external challenges of our performance to help us see gaps. Our configuration control efforts, for

example, included the conduct of two self-assessments using INPO guidance and other external industry operating experience.

In addition to the changes in effectiveness of our ability to self-identify, changes have been made in the effectiveness of corporate engagement and oversight of our performance. We've established a corporate radiation and criticality safety program manager to strengthen governance and oversight in these areas. Our internal and corporate audit programs have been improved to facilitate more intrusive reviews.

A corporate Nuclear Safety Oversight Committee oversees the effectiveness of our nuclear safety culture improvement efforts. Additionally, to continue to foster critical review and oversight, our new Columbia management review meeting process requires the participation by respective corporate functional area managers.

Next slide. To support the commitment that we're making to create sustainable improvement, we conducted an analysis of the scrubber event and other several important events in our recent past to identify the common underlying leadership, organizational and programmatic drivers that shape the culture that created these events.

This analysis was conducted by a team comprised of some of my staff, along with nuclear industry executives with extensive experience in assessing and improving poor nuclear plant performance. We're leveraging the guidance provided in the INPO document, "A Strategic Framework to Significantly Improve Nuclear Plant Performance." This document provides a time-tested rigorous approach to help improve

performance. It is one that my recovery manager and I have experience with in previous positions we've held.

Using the guidance in this document, we have scoped our excellence plan using many inputs, including the recent scrubber event root cause, the common cause analysis of several recent events, employee survey and feedback, and input from other external consultant visits.

Our excellence plan is a multi-year effort intended to broadly address improvements across all aspects of our performance, to just our criticality safety program. From my previous recovery experience and from information provided in the just-referenced INPO document, our plan and the sustainability of our efforts are based on instilling values and implementing processes that support the effective implementation of the principles listed in the sub-bulleted items on this slide.

The scope of this plan is too large to cover in a short discussion. It is important to note that it does contain additional efforts important to improving our criticality safety program, such as our procedure upgrade project, new criticality safety performance metrics, a database to track and maintain configuration on structures, systems and components that impact our safety basis, ongoing nuclear safety culture behavior reinforcement, and additional modifications to further strengthen the performance of our scrubber and ventilation systems, and preventing the likelihood of mass accumulation.

My staff and I are being effectively supported by our company in regards to this effort. We've been provided the resources

necessary, including the recovery team to support my staff in ensuring the safe day-to-day operations, while they also implement the needed performance improvements in a timely manner commensurate with risk.

We also have staffed additional permanent resources to strengthen our infrastructure in support of critical improvement areas, including our corrective action program, our procedure programs and metrics. Thank you again for the opportunity to discuss our improvements with you today. I look forward to answering your questions. Now I'll turn it over to my senior vice president, Michele DeWitt.

MS. DeWITT: Thank you, Mike. Next slide, please. As Mike described, this was not only a watershed event for our Columbia site, but for across Westinghouse as a whole. Following the S-1030 event at Columbia, the extent of condition review included our international fuel fabrication facilities, where we required inspections of their systems for uranium accumulation as well.

Similar to Columbia, we learned that weakness existed in the sharing of operating experience across our fabrication facilities. We are working to improve the sharing of operating experience across our manufacturing sites, and all across Westinghouse in general. In response to the event, we strengthened our corporate assessment and oversight processes.

Westinghouse quality programs and assessments has added audits to the annual schedule for the review of license activities at fuel fabrication facilities. Such reviews are intended to take a deeper look into

plant activities. Specific topics that have been strengthened are the areas of nuclear criticality, safety and fire protection.

Industry experienced experts have been hired to perform these functions across all Westinghouse sites. In addition, an improved general governance and oversight model is being implemented across Westinghouse. Speaking from a corporate level, we are providing Mike and his staff with the support and funding that they need to be successful now and in the future.

We've increased our capital investments to improve safety and reliability at the site, and our filing under Chapter 11 in March of this year has not changed our commitment in that area. I want to be perfectly clear that we have the necessary financial resources to support and safely operate Columbia.

The Columbia excellence plan and the additional commitments that will be in the confirmatory order as a result of the alternative dispute resolution process are fully funded by Westinghouse. In short, Westinghouse is fully committed to safe operation at Columbia and in all of our global facilities. Thank you for your time, and we welcome your questions.

CHAIRMAN SVINICKI: Well thank you very much for that presentation. I will lead off with a comment and a couple of questions. I have visited the Columbia Fuel Fabrication Facility, and in contrast to many operating reactor visits I've made, it feels like just that. It feels like a precision manufacturing fabrication type of facility is very different, and as a result

you've described how you were -- you've cast a wide net in terms of benchmarking and looking for -- you went to INPO for an improved performance assistance aids and things like that.

It is difficult that there isn't a large cohort of peer facilities. If there's an issue, a PWR/BWR issue in the U.S. operating fleet, you know, they can go to peer licensees, and there's a good likelihood they can get some analogous experiences, and it's directly relevant.

Can you talk about how you adapted these benchmarks and assistance aids that you looked at if they were more for reactor operations? How did you adapt those specifically to the Columbia facility, and then could you talk a little bit about how you distinguish between the things that are in -- the corrective actions needed specifically at Columbia, and then the excellence plan, which is seems takes you to a level of performance that's beyond that?

I know the obvious distinction is that one is more in a regulatory compliance base and the other is a set of discretionary measures. But can you talk about how you approached the development of each of those?

MR. WEAVER: Yeah certainly. So I've spent 30 years on the operating side of the industry, and so I'm still relatively new to this side of the business. When you think about the challenges that we face at Columbia, they're not necessarily about how we manufacture our product or the quality of the product. It's about how we operate the facility.

And so, you know, early in my time there, it became

apparent to me that we're really -- this is not much different than an operating plant. We have similar structure, we have similar positions. Equipment reliability is very important. Preserving safety margins are very important, work management's very important.

So when you think about our procedures, when you think about our opportunity to benchmark and learn, it really opens up the door to beyond just fuel cycle facilities. Certainly, there is aspects of our business and the way we do work that is very unique to our business, that we need to look inward to our industry to get insights from and learn from.

But when you think about nuclear safety culture and all those processes I just described, we're not much different. It's just how do we go about applying the principles behind those programs in a way that makes sense for us, based on what we do? So our opportunity has been to use those documents and those benchmarking opportunities and tailor them and pull really the concepts and the principles out of them, and not necessarily commit to everything.

So it's -- that's how we're taking that approach, and it seems to be working fairly well for us. In terms of the corrective actions and the scope and, you know, how do I differentiate, I think, between what do I need to do with respect to the performance issue that got us here, and overall excellence.

So you know, clearly in my mind, the cultural norms, you know, the behaviors, the values and the processes that deliver the result with the scrubber fundamentally influence our performance across the board.

First and foremost, our efforts have to be focused and our restart efforts and the commitments that we have made in the confirmatory action letter and subsequently when -- through the ultimate dispute resolution process are largely centric around our criticality safety program, and making sure that that program's effective and that we're preserving margins of safety there.

The excellence plan takes it beyond all that, and applies it broadly to our other safety disciplines, and more broadly into all other aspects of our operations. So that's how I differentiate the two.

CHAIRMAN SVINICKI: Okay, thank you. Those answers are very helpful, thank you. Commissioner Baran.

COMMISSIONER BARAN: Well, thank you all for being here today. We heard on the first panel and again on this panel and there was a significant build-up of uranium in the scrubber, an amount that was several times the regulatory limit. It appears that criticality was avoided only through the lucky circumstance of the favorable geometry of the material.

What did your root cause analysis reveal about how this accumulation went undetected long enough for this amount of uranium to build up?

MR. ANNACONE: Okay, yeah. So there were clearly a number of factors that are involved. As you know, you don't have an event due to one singular issue, right. You have a combination of -- usually it's a combination of behaviors and values, procedural problems, standards, etcetera.

So you know, we identified a number of factors through our

root cause analysis that led to this. I would say, you know, first and foremost it's the -- it's the value of understanding and preserving margins of safety. You know, as operators of a nuclear facility, that's our primary accountability. It's to protect our people and the environment, based on the product that we deal with, special nuclear material.

So how do we behave on a daily basis and then how are our processes set up to ensure that we understand that, and that we're preserving that? So when I reflect on that and I think about this activity, it was treated as a maintenance activity to clean the material out of the scrubber.

The mind set was not one of we're up there validating the health of our safety basis, and verifying that the conditions that we're finding in there are preserving the margins of safety and the assumptions that were defined in our criticality safety basis.

So it started with that mind set. That then translates into things such as when we make design changes to the plant, how are we preserving those margins? How are we engaging with our criticality safety experts in that process to ensure that as we're making changes, we don't undo something and that our post-modification process is validating that through actual results?

In procedure space, you heard me discuss improvements in our inspection processes around the documentation rigor, and the specificity of the limits in the procedures. We were lacking that. The procedures that went and inspected and documented the results of those inspections didn't capture that information in a way that carefully tied it to an acceptance criteria

and a validation by an expert to say this is okay.

That work was being done a little more ad hoc. So it's a combination of starting first with the value principle in your heart and mind, that this is what I'm about to do and how important it is and then how does that translate into processes, procedures, training, having a training program.

So our focus through our ongoing efforts, you know, by strengthening our training program and our procedures, that will balance the work we're doing in nuclear safety culture space around the values and principles to arm our people with the information to have that ready intrusive questioning added to it.

COMMISSIONER BARAN: There was some discussion on the first panel about the scrubber and the ventilation system, and the accident sequences associated with them being viewed or designated as low risk.

MR. ANNACONE: Uh-huh.

COMMISSIONER BARAN: Do you see that as a contributing factor?

MR. ANNACONE: Yeah, and you know, I think that -- I might move it away from low risk to maybe low margin.

COMMISSIONER BARAN: Okay.

MR. ANNACONE: And I talk about preserving margins of safety, and I think, you know, I think the opportunity or I know the opportunity through the work that we're doing moving forward is really to assess the margins of safety. So what I mean by that is in the case of the scrubber, you

know, we can have discussions about probability and consequence in determining risk.

But the reality of it was there were some limitations around this configuration that put some constraints around the controls that we had on it, and so we were controlling on a single parameter without getting into too much detail. Then on top of that, we had an over-reliance on administrative control.

And so when I think about that, that creates a fairly low margin configuration to preserving safety. So I think that opportunity isn't necessarily just the focus on risk, but more on what are your margins of safety and how are you preserving them? Certainly relying on more engineered controls is much more effective certainly, because then the human equation --

COMMISSIONER BARAN: As you move forward, you're going to apply these lessons learned, I assume, beyond just scrubbers and the ventilation system, but corrective actions.

MR. ANNACONE: We have corrective actions that we are continuing to work, to assess the application of these lessons learned across all of our criticality safety evaluations.

COMMISSIONER BARAN: Okay, and just wanted to ask one question about the bankruptcy, which is how is Westinghouse ensuring that the bankruptcy proceeding doesn't impact performance at Columbia?

MS. DeWITT: So as we've gone through the bankruptcy process, you may have read, because there's a lot in the media about that,

but we as part of that process have secured funding which is sufficient to be operating our business, you know, on a core -- our core business on an ongoing basis, and in fact our business is a cash positive business as we've been going through since the filing.

So we have been proceeding with all of our capital programs and staffing and all with really no impact whatsoever from the corporate bankruptcy process.

COMMISSIONER BARAN: Okay, great. Thank you.

CHAIRMAN SVINICKI: Thank you. Commissioner Burns, please proceed.

COMMISSIONER BURNS: Oh, thank you. Thank you for the presentation and insight. One of the things you touch on is in terms of looking not only at the Columbia facility, but the particularly international facilities. Were there any type of insights you received from that look, in terms of the operation in Sweden and I guess it's also the UK?

MS. DeWITT: Yes, that's a good question because there were, there actually were. What we did, based on the learnings that we had at Columbia, is that we established a corporate audit team that in addition to self-assessments that we had the sites do, this team was focused on criticality, safety, but also more broadly to on nuclear safety culture.

They came in and did an assessment and audit really at our UK facility and our Swedish facility, and at the UK facility they found a pretty strong program. There were some areas where they made some recommendations that we could strengthen in the area were around, I would

say, raising visibility and early warning kind of type of things.

At the Swedish facility, while we found that there were no issues in there wet systems and their scrubber systems, we also did a review of dry ventilation there, and we did find the need for some improvement in their gamma scanning and periodic inspections of their ventilation.

They did find some accumulations. Nothing that was, you know, exceeding any limits or causing any criticality. But we did find some weaknesses that needed to be strengthened there. So we've implemented those changes.

In addition, from a sustainable basis ongoing, we did strengthen and create at our corporate level radiation protection leader position and have established more ongoing audit program and metrics, looking out in particular in criticality safety across all of our facilities, that will enhance that sharing of OE, and also be holding everyone to common standards, you know, and higher standards going forward.

COMMISSIONER BURNS: Okay, thank you, and actually sort of my last question goes in terms of the corrective action program you've described, while I think efforts to undertake that, where do you see perhaps coming down the line steps or actions you need to take to ensure the sustainability of the corrective action program, and that can either be in a corporate or on a site basis?

MR. ANNACONE: Yeah. So for the corrective action program, for a sustainability standpoint, they kind of harken back to the slide I had, you know, starting one first with our value towards it, right. Do we -- is

it ingrained in our hearts and minds that this is the way that we go about finding and fixing our problems, and the rigor needed to document that and to validate it?

So you know, Step 1 is to build that into the culture. Step 2 really then goes and looks at the process and how well we're leveraging it in a way that's driving results.

You know, I look at how we measure our performance, and so how are we engaging as leaders in the front end to make sure we understand issues, that we're taking prompt, immediate actions where needed, quickly assessing the need for extended condition on issues, which is where we're heavily focused right now in this early stage of our journey, and then to shift towards screening to levels of significance, and ensuring that we're doing effective investigations that are really fixing the problem, and shift the focus now towards are we delivering a result.

A lot of times -- in my past experience, a lot of energy is spent on the front side of the corrective action program, you know, and it's an issue and we make sure we screen it and we understand its significance. Then we go off and do our things. The money is made on the back side. Did we actually fix the problem?

So we have work to do to make sure that my leadership team's engagement in our monitoring of performance through our oversight boards and our corrective action program is are we actually fixing the problems, and what's the demonstrated evidence that shows that we actually fixed it, not just we completed an action.

COMMISSIONER BURNS: Thank you. Thank you, Chairman.

CHAIRMAN SVINICKI: Well thank you to the Westinghouse participants here today and to all of our licensee participants. We appreciate your presence here, your responses, your openness. Thank you also to the NRC staff for their very thorough work and preparation throughout this process, and with that we are adjourned.

(Whereupon, the above-entitled matter went off the record at 12:09 p.m.)