From: Thomas Saporito <saprodani@gmail.com>
Sent: Thursday, April 17, 2014 3:25 PM
To: Regner, Lisa
Subject: 2.206 Petition - Attachment 7 (presenation to NRC-PRB)
Attachments: 07.Attachment-Seven.pdf

Hi Lisa:

Please find the attached document (2.206 Petition - Attachment 7) which is to be included in the official NRC record made during today's conference call.

Please confirm receipt via email when you have a chance.

Kindest regards,
Thomas

Thomas Saporito
Senior Consultant
Saprodani Associates
Jupiter, Florida 33458

Voice: (561) 972-8363
Email: saprodani@gmail.com

Attachment-Seven

to

March 11th, 2014

2.206 Enforcement Petition

Introduction:

For the record, my name is Thomas Saporito, Senior Consultant with Saprodani Associates in Jupiter, Florida – I am the Petitioner currently before the NRC Petition Review Board (PRB). In addition to the 2.206 Enforcement Petition filed with the NRC in this matter – I have provided the PRB with **six-attachments** in support of the 2.206 petition. I will refer the PRB members to those specific attachments in my presentation today – and I respectfully request that the attachments be incorporated into today's record transcripts – including a copy of today's presentation which is identified for the record as **Attachment-Seven** which I will email to Lisa Regner, NRC Project Manager at the conclusion of today's meeting. If any member of the public would like a copy of the attachments, please send me an email request at: saprodani@gmail.com.

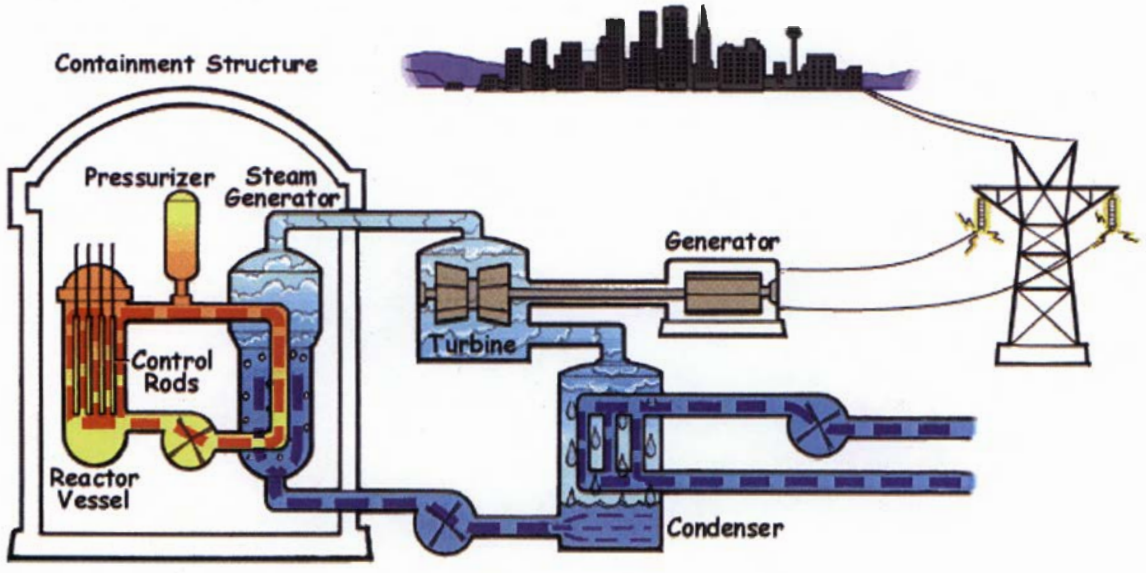
To the extent that this is a meeting for which the public is permitted to attend – I will briefly describe the overall operation of a typical Pressurized Water Reactor or (PWR) - to enlighten members of the public – who may later read the meeting transcripts – or who are attending this meeting in-person or via telephone.

Brief System Description:

Attachment-Five

I would now refer the PRB members to **Attachment-Five** - which is identified for the record as a diagram of a typical Pressurized Water Reactor or PWR:

Steam generators are heat exchangers used to convert water into steam from heat produced in a nuclear reactor core. They are used in pressurized water reactors (PWR) between the primary and secondary coolant loops.



In commercial power plants steam generators can measure up to 70 feet in height and weigh as much as 800 tons. Each steam generator can contain anywhere from 3,000 to 16,000 tubes, each about three-quarters of an inch in diameter. The coolant or (treated water), is maintained at high pressure to prevent boiling, and is pumped through the nuclear reactor core. Heat transfer takes place between the reactor core and the circulating water and the coolant is then pumped through the primary tube side of the steam generator by coolant pumps before returning to the reactor core. This is referred to as the ***primary loop*** – and is shown as the "orange" colored dashed lines in the reactor vessel and the tubes in steam generator as depicted in Attachment-Five. It is noted here that the *primary loop water is highly radio-active* as it travels through the thousands of tubes inside the steam generator.

The water flowing through the steam generator boils water on the shell side to produce steam in the ***secondary loop*** that is delivered to the turbines to make electricity. It is noted here that the *secondary loop* water is not radio-active - and simply acts as a heat-sink to transfer the heat energy from the *primary loop* to the *secondary loop* – as depicted in Attachment-Five by the dark blue colored water in the steam generator.

The steam is subsequently condensed via cooled water from the ***tertiary loop*** and returned to the steam generator to be heated once again. The tertiary cooling water may be recirculated to cooling towers where it sheds waste heat before returning to condense more steam. Alternatively - once through tertiary cooling - may also be provided by a river, lake, or ocean.

This primary, secondary, tertiary cooling scheme - is the most common way to extract usable energy from a controlled nuclear reaction. I note here that in all cases **– the heat energy generated in the nuclear reactor core must be constantly removed to prevent a core melt-down – similar to the ongoing Fukushima nuclear disaster.**

These water cooling loops also have an important **safety role** because they constitute one of the primary barriers between the radioactive and non-radioactive sides of the plant as the primary coolant becomes radioactive from its exposure to the core. For this reason, the integrity of the steam generator tubing is **essential** in minimizing the leakage of water between the two sides of the plant. Steam generator tubes often degrade over time – and if a steam generator tube bursts while a plant is operating - contaminated steam could escape directly to the secondary cooling loop. This is the reason that - during scheduled maintenance outages or shutdowns - some or all of the steam generator tubes are inspected by eddy-current testing, and individual tubes can be plugged to remove them from operation.

Heat-Removal and Heat-Sink

As can be seen in the diagram and through my brief description of how a PWR operates – the steam generators employed at the St. Lucie Unit-2 nuclear plant – act as a **heat-sink** in removing heat from the **highly radio-active *"primary"* water** – flowing from the core of the nuclear reactor. This process allows the nuclear reactor at the St. Lucie Unit-2 to maintain full-power operation without causing the nuclear fuel-rods inside of the reactor to melt-down.

Therefore, the integrity of the St. Lucie Unit-2 steam generator tubes is absolutely critical to

nuclear safety – and to the protect public health and safety.

For this reason standing alone – the 2.206 Enforcement Petition requests that the NRC issue a Confirmatory Order to the licensee requiring the licensee to maintain the St. Lucie Nuclear Unit-2 in a "cold-shutdown" mode of operation until such time as:

1. The licensee completes an ***"independent"*** assessment to fully understand and correct the potential and/or realized damage to the Unit-2 steam generators and the modifications made to the Unit-2 steam generators; and

2. The licensee completes a comprehensive evaluation of all nuclear safety related plant equipment and components which may have been otherwise modified and/or affected as a direct or indirect result of modifications made to the Unit-2 steam generators; and

3. The licensee completes, identifies and removes any and all damaged and/or unauthorized nuclear safety related plant equipment and/or components; and

4. The licensee completes an ***"independent"*** safety-assessment through a 3rd party contractor to review all plant nuclear safety related equipment and/or components – to ensure that such nuclear safety related systems and/or components will properly function to protect public health and safety under all NRC regulations and requirements under 10 CFR Part 50 and under other NRC regulations and requirements.

Attachment-Six

I would now refer the PRB members to **Attachment-Six** - which is identified for the record as a Nov. 8th, 2014 email correspondence from Lisa Regner, NRC Project Manager to me. The email details 6-specific reasons that the NRC-PRB decided not to take the immediate actions requested in the instant 2.206 petition. At this time, I will briefly respond to each of the PRB's stated reasons as follows:

1. The staff is not aware of any safety issue relating to the design and operation of the St. Lucie 2 replacement steam generators (RSGs). The pressure boundary components of the RSGs, including the tubesheets, were designed in accordance with 10 CFR 50, including the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section III, thus ensuring their structural integrity. The broached-hole support plates for the RSGs are fabricated from stainless steel, significantly reducing any potential for denting compared to carbon steel support plates. Concerns for denting were the motivating factor cited in the Final Safety Analysis Report for the use of the "egg-crate" design of the carbon steel supports in the original steam generators (SGs). Both broached-hole supports and egg-crate designs have been used successfully in both original and replacement Sgs.

   Petitioner's Response:
   Although the St. Lucie Unit-2 replacement steam generator pressure boundary components – including the tubesheets – appear to have been designed in accordance with 10 CFR 50 – the licensee cannot affirm their structural integrity to the NRC – because

the stay cylinder was apparently removed from the bottom of the steam generators. Notably, the stay cylinder was apparently incorporated into the licensee's (original) Final Safety Analysis Report to ensure that the steam generator tubesheet was not subject to excessive flexing during reactor power operation. To the extent that the stay cylinders have apparently been removed by the licensee – the NRC cannot have any measure of reasonable assurance that the licensee will operate the St. Lucie nuclear reactor in full compliance of NRC regulations and requirements under 10 CFR 50 and under other NRC authority.

Moreover, the licensee's apparently added 588-additional tubes to the St. Lucie Unit-2 steam generators. Thus, it is reasonable to conclude that additional tubesheet penetrations were made to accommodate the additional tubes. Thus, to the extent that additional tubesheet penetrations were made in the steam generator tubesheets – there now exists an increased likelihood that the tubesheet will flex to a greater extent under full power operations – in violation of safety margins set-out under 10 CFR 50 – and significantly increase the probability of a nuclear accident – which could result in a loss-of-coolant accident – and a significant release of radioactive material and particles into the surrounding environment – and adversely affect public health and safety. Therefore - the NRC cannot have any measure of reasonable assurance that the licensee will operate the St. Lucie nuclear reactor in full compliance of NRC regulations and requirements under 10 CFR 50 and under other NRC authority.

2. The Reactor Oversight Process verifies that St. Lucie Unit 2 is operated in accordance with the technical specifications. The technical specifications require implementation of a Steam Generator Program (inspections, tube wear limits for removing tubes from service, tube integrity assessments) to ensure tube integrity is maintained.

Petitioner's Response:
Although the licensee's Steam Generator Program may implement (inspections, tube wear limits for removing tubes from service, and tube integrity assessments) – the licensee installed replacement steam generators – which were not specifically designed for the Combustion Engineering Pressurized Water Reactor employed at the St. Lucie Unit-2. Moreover, the licensee has additionally implemented a power uprate program at the St. Lucie Unit-2 which caused a significantly greater amount of stress on the reactor coolant system – which is likely to result in a loss-of-coolant nuclear accident as described earlier. Therefore - the NRC cannot have any measure of reasonable assurance that the licensee will operate the St. Lucie nuclear reactor in full compliance of NRC regulations and requirements under 10 CFR 50 and under other NRC authority.

3. The SG Program requires the licensee to perform inspections to evaluate tube safety margins for all tubes against regulatory requirements to confirm that the SGs continue to be operated safely. These inspections also are used to determine what tubes need to be removed from service and what other actions may be needed to ensure continued safe operation of St. Lucie 2 until the next scheduled inspection. Resident inspectors are onsite to verify compliance with the inservice inspection (ISI) program (the SG Program inspections are part of the licensee's ISI).

Petitioner's Response:
Although the licensee has conducted inspections under the Steam Generator Program to determine what tubes need to be removed from service – the licensee has failed to date – to determine the "root-cause" of the excessive degradation of the steam generator tubes. To the extent that the licensee has failed to determine the "root-cause" of the continued degradation of the steam generator tubes - the NRC cannot have any measure of reasonable assurance that the licensee will operate the St. Lucie nuclear reactor in full compliance of NRC regulations and requirements under 10 CFR 50 and under other NRC authority.

4. The plant has been operating acceptably for 7 years since the SGs were replaced in 2007. There have been no findings of significance in the past three NRC inspections conducted to provide oversight of the licensee's shutdown ISI inspections. Only a very small percentage of tubes have needed to be plugged. There is no measurable primary to secondary side leakage.

Petitioner's Response:
Since the licensee replaced the St. Lucie Unit-2 Steam Generators in 2007 – there has been a significant and increasing number of steam generator tube wear indications. Notably, to date – the St. Lucie Unit-2 steam generators have significantly more tube wear indications and the number of wear indications is much greater than at other units with AREVA Steam Generators. Notably – it is not the number of tubes that the licensee continues to plug – which should be the NRC's only focus – rather it should be the significantly increasing number of tube wear indications – which have the potential to cause the tubes to burst and result in a **loss-of-coolant accident** as previously described. Once again, the licensee has failed to date – to determine the *"root-cause"* of the significantly increasing number of tube wear indications – and to correct the problem.

5. There is no indication that the licensee used the 10 CFR 50.59 process improperly. The Region II Resident Inspectors reviewed the 2007 Unit 2 steam generator replacement project, including the Florida Power and Light 10 CFR 50.59 evaluations; the NRC inspectors identified no findings of significance.

Petitioner's Response:
My research as to whether the licensee used the 10 CFR 50.59 process improperly – indicates that the licensee – apparently did improperly use the 10 CFR 50.59 process with respect to installation of the St. Lucie Unit-2 steam generators. This subject matter will be discussed in greater detail during the remainder of this presentation.

6. In February 2011, FPL submitted a license amendment request for a power uprate. The amendment request provided evaluations of the SG replacements with respect to thermal hydraulics, structural integrity, and tube wear. The NRC staff reviewed the amendment, including the effects on the replacement SGs, and ultimately approved the amendment.

Petitioner's Response:
Although the NRC staff reviewed the amendment, including the effects on the replacement Steam Generators, and ultimately approved the amendment; there appear to be significant

nuclear safety concerns for which the NRC staff may not have considered – or may not have properly considered in approving the amendment. This subject matter will be discussed in greater detail during the remainder of this presentation.

Background Information:

At this time I will very briefly discuss important background information related to the St. Lucie Unit-2 nuclear plant – to provide the PRB members with a complete understanding about the critical and ongoing nuclear safety issues surrounding the steam generator tubes – for which the licensee has apparently failed to specifically identify the ***"root-cause"*** and for which the licensee has apparently failed to correct – to date.

FPL License Amendment:

Attachment-One

I would now refer the PRB members to **Attachment-One** - which is identified for the record as a **Nov. 24th, 2004 Notice by the Nuclear Regulatory Commission related to a proposed license amendment for the St. Lucie Unit-2 nuclear plant**. I have highlighted the text of interest in the document.

At page-2 below the enumerated #1 paragraph, it states in part, that:

- FPL proposes to modify the definitions of steam generator "Plugging Limit" and "Tube Inspection," as contained in the St. Lucie Unit 2 Technical Specification (TS) Items 4.4.5.4.a.6 and 4.4.5.4.a.8, respectively.

and then the next paragraph, it states in part, that:

- Tube burst is precluded for a tube with defects within the tubesheet region because of the constraint provided by the tubesheet. As such, tube pullout resulting from the axial forces induced by primary to secondary differential pressures would be a prerequisite for tube burst to occur.

Petitioner avers here that the NRC ultimately approved the proposed license amendment and that the licensee replaced the original steam generators at the St. Lucie nuclear plant Unit-2.

However - based on information and belief – it appears that the licensee made certain and specific modifications to the St. Lucie Unit-2 steam generators in:

- removal of the stay cylinder
- the perforation of the central region of the tubesheet; and
- the addition of 588 tubes in the central region of the tubesheet

The removal of the stay cylinder and the additional 588 holes apparently made in the central region of the tubesheet to accommodate 588 more tubes – appears to contradict the NRC's determination made with respect to tube burst being precluded by constraint provided by the

tubesheet. Indeed - the purpose of the stay cylinder was to prevent tubesheet flexing. The steam generators in St. Lucie Unit 2 apparently each have a tubesheet with more holes in its center precisely where more flexing is more likely to occur. The weakened tubesheet raises concerns about the safety and integrity of Unit 2's pressure boundary in the event of a steam line break accident.

Attachment-Two

I would now refer the PRB members to **Attachment-Two** - which is identified for the record as a **Nov. 30th, 2010 letter (w/enclosure)** from Tracy J. Orf, NRC Project Manager, Plant Licensing Branch to Mano Nazar, Executive Vice President and Chief Nuclear Officer at the Florida Power & Light Company.

I have highlighted certain areas of interest as follows:

On page-1 of the enclosure (which is the 1st page beyond the NRC letterhead) it states that:

- St. Lucie Unit-2 has two replacement SGs manufactured by AREVA. Each SG has 8999 termally treated Alloy 690 tubes with an outside diameter of 0.75 inches and a wall thickness of 0.043 inches.

and then at **page-2 of the enclosure** it states that:

- Approximately 5800 indications of wear at the antivibration bars were detected (3700 in SG A and 2157 in SG B).

and then at the very bottom of page-2 of the enclosure it states that:

- Based on a review of the information provided, the NRC staff concludes that the license provided the information required by their technical specifications. In addition, the staff concludes that there are no technical issues that warrant follow-up action at this time since the inspections appear to be consistent with the objective of detecting potential tube degadation and that inspection results appear to be consistent with industry operating experience at similarly designed and operated units (although the number of wear indications is much greater than at other units with AREVA SGs).

So, as of Nov. 2010, the licensee (and the NRC) were fully aware that the St. Lucie Unit-2 AREVA steam generator tubes were exhibiting a much greater number of wear indications than were observed at other nuclear units employing AREVA steam generators. None-the-less, as of Nov. 2010 - the licensee failed to identify and failed to correct the *"root-cause"* of the problem causing the degradation of the St. Lucie Unit-2 steam generator tubes. Despite this significant and *"unresolved"* nuclear safety concern – the NRC authorized the licensee to operate the St. Lucie nuclear reactor at full-power.

Attachment-Three

I would now refer the PRB members to **Attachment-Three** - which is identified for the record

as a Mar. 9th, 2014 Declaration of Arnold Gundersen. Mr. Gundersen is the Chief Engineer at Fairewinds Associates – and is a qualified nuclear engineer and expert witness. I have highlighted specific areas of interest for the PRB members.

Specifically, at page 3, par. 9, Gundersen states that:

- I have reviewed FPL and NRC documents that discuss the safety of the St. Lucie Unit 2 steam generators with respect to modifications that were made from the original steam generator (OSG) designs to the replacement steam generator (RSG) designs.

and then at page 5 and continuing on 6 at par. 16, Gundersen states that:

- In Combustion Engineering (CE) steam generators (including the original St. Lucie steam generators), the tubesheet is supported by a stay cylinder that is located in the plenum. The stay cylinder is attached to the bottom of the steam generator and the underside of the tube sheet. Because the stay cylinder is designed to relieve the weight in the middle of the tubesheet and to prevent the tubesheet from flexing upward in the event of an accident, the stay cylinder serves a passive safety-related role. As described by the NRC, the stay cylinder in a steam generator serves an important safety function in the event of a major accident as it "supports the tubesheet in the event of a steam line break and, therefore, lowers the tubesheet flexure." Letter from Alan B. Wang to Harold B. Ray, re San Onofre Nuclear Generating Station, Unit 2 (Sept. 23, 2002) (ML022540872). The stay cylinder is unique to the CE design because the CE steam generators are twice as large as the Westinghouse design. The larger diameter of the CE steam generator would cause the tube sheet to flex more in the event of a steam line break accident at St. Lucie Unit 2 than at other reactors with smaller steam generators.

and then at page 8 at par. 20, 21 and 22, Gundersen states that:

- Unfortunately, a leak or disintegration of one or more tubes would cause the radioactive water to escape the containment. Because there is at least a 1,000-pound-per-square-inch (psi) pressure difference between the high-pressure radioactive side of the tubes and the lower pressure steam that then leaves the containment, a leak will inevitably release radioactivity to the environment.

- Additionally, gross failure of one or more of the steam generator tubes could create a nuclear design basis accident and cause the nuclear reactor core to lose a portion of its cooling water. However, the unique concern regarding degraded steam generator tubes is that uncontrolled radiation releases from a tube break will not remain inside the containment building and instead leak out of the facility and into public areas because it has a path to the environment via atmospheric dump valves and steam generator blowdown.

- If a steam line break accident were to occur, the depressurization of the steam generator caused by the steam line break -- coupled with the lack of water at the top of the steam generators -- would cause cascading tube failures, involving dozens of

tubes. The cascading tube failures would pop like popcorn and cause excessive offsite radiation exposures. Operators are not trained on procedures to mitigate multiple tube failures, and emergency cooling systems lack the capacity to mitigate an accident if more than one tube were to fail. Hence, maintaining tube integrity is of the utmost importance.

and then at page 14 at par. 31, Gundersen states that:

- A careful review of subsequently issued documents reveals, however, that in fact the Unit 2 RSGs employed significant design changes. While FPL claimed in its Section 50.59 report that it had made " no changes to interfaces with the reactor coolant (RC) ... system ... and no significant changes to major component supports or piping supports," it is now clear from correspondence related to the San Onofre steam generators that the RSGs no longer contained the stay cylinders that were part of the OSG design discussed in the FSAR as structural support for the reactor coolant system and included in the Aging Management Program (AMP). See, e.g., E-mail from Kenneth Karwoski to Greg Werner and Art Howell.

and then at page 15 at par. 31, Gundersen states that:

- documents related to subsequent inspections of the St. Lucie Unit 2 steam generators show that AREVA added 588 new tubes to the original 8,411 tubes, now totaling 8,999 tubes.

and further down in par. 31, Gundersen states that:

- Finally, in order to accommodate the 588 new tubes, it is reasonable to infer that the region of the tubesheet that had been directly above the stay cylinder was now perforated with 588 new holes. As discussed in more detail below, the purpose of the stay cylinder was to prevent tubesheet flexing. The RSG in St. Lucie Unit 2 has a tubesheet with more holes in its center precisely where more flexing is more likely to occur.

and then at page 17 at par. 37, Gundersen states that:

- While the RSG tubes at St. Lucie Unit 1 showed nominal wear over the past decade, an unusually high number of tubes in the Unit 2 RSGs exhibited wear in 2009 during the very first inspection after the RSGs were installed.

- Demonstrations of tube wear continued to increase in subsequent inspections in 2011 and 2012. In the latest inspection in September 2012, an astonishing 2,211 steam generator tubes in SG A showed 7,646 wear indications and 1,503 steam generator tubes in SG B showed 3,988 wear indications.

- Of equal concern is the fact that the total tubes exhibiting wear increased from 2,046 in 2009 to 3,714 in 2012 for an increase of 81%, even before the EPU increase was implemented.

History of wear indications/affected number of tubes (cumulative)			
	Inspection Year		
	2009	**2011**	**2012**
SG A	**3,700/1,231**	**5,864/1,862**	**7,646/2,211**
SG B	**2,157/815**	**2,963/1,125**	**3,988/1,503**

and then at page 18 at par. 39, Gundersen states that:

- St. Lucie was shut down for a scheduled maintenance outage on March 3, 2014. FPL has committed to inspect 100% of the steam generators, as the NRC explained in a recent Steam Generator Update conference call. This will be the first outage following a complete operating cycle under Unit 2's extended power uprate. FPL has not committed to provide the results of the inspection before starting the reactor again.

Before I move on to the next attachment – let me restate the very last remark by Mr. Gundersen in which he stated: ***FPL has not committed to provide the results of the inspection before starting the reactor again.***

At this time – and for the record – I am incorporating *"supplemental requests"* into the instant Mar. 11th, 2014 Enforcement Petition submitted to to the NRC under Section 2.206.

The supplemental requests are:

- ***That the NRC require the licensee to maintain the St. Lucie Unit-2 nuclear reactor in a cold-shutdown mode of operation until:***

    1. ***the licensee provides the NRC the results of the licensee's most recent inspection of the St. Lucie Unit-2 steam generator tubes and components which was apparently completed during the current refueling outage; and***

    2. ***the license identifies and affirms exactly what is the root-cause of the steam generator tube degradation - and specifies exactly what corrective actions will be taken; and***

    3. ***completes any and all specified corrective actions to the St. Lucie Unit-2 steam generators to prevent further tube degradation.***

Attachment-Four

I would now refer the PRB members to **Attachment-Four** - which is identified for the record as a Jan. 27th, 2014 letter form Siva P. Lingam, NRC Project Manager, Plant Licensing Branch to Mano Nazar, Executive Vice President and Chief Nuclear Officer at the Florida Power & Light Company. I have highlited the points of interest in the document.

At page-2 of the document it states that:

- Approximately 11,518 indications of wear at the AVBs were detected (7,485 in SG A and 4,033 in SG B). Of these indications, the number of new indications was 1,623 in SG A and 1 ,070 in SG B. The average growth rate per effective full power year (2.2 percent in SG A and 0.6 percent in SG B) continues to decline.

- The licensee is implementing a power uprate in the next cycle of operation (Cycle 20) and incorporated a wear rate increase of 24 percent in their operational assessment to account for the effects of the power uprate.

Based on a review of the information provided, the NRC staff concludes that the licensee provided the information required by their technical specifications. In addition, the NRC staff concludes there are no technical issues that warrant follow-up action at this time, since the inspections appear to be consistent with the objective of detecting potential tube degradation, and inspection results appear to be consistent with industry operating experience at similarly designed and operated units. The NRC staff notes, however, that the number of wear indications is much greater than the number of wear indications found at other AREVA SGs of similar age.

Petitioner notes again – for the record - the date of the NRC letter to the licensee of Jan. 27th, 2014. So, as of Jan. 27th, 2014, the licensee apparently failed to identify the *"root-cause"* of the continuing steam generator tube degradation – and the NRC noted that the number of wear indications is much greater than the number of wear indications found at other AREVA SGs of similar age.

At this time – and for the record – I am incorporating another *"supplemental request"* into the instant **Mar. 11th, 2014 Enforcement Petition** submitted to to the NRC under section 2.206.

The supplemental request is:

- ***That the NRC require the licensee to maintain the St. Lucie Unit-2 nuclear reactor in a cold-shutdown mode of operation until:***

    1. ***The licensee provides the NRC evidence, testing results, and expert opinion – affirming that the increased wear rate of 24-percent resulting from the extended power uprate to the St. Lucie Unit-2 will not cause further steam generator tube degradation – or accelerate the current rate of the steam generator tube degradation – or cause a steam generator tube burst in-light of the extensive tube degradation currently existing; and in consideration of any additional stress placed on the steam generator tubes due to the licensee's tube plugging activities.***

Summary Comments and Conclusions

Based on the facts currently known to the NRC related to the excessive number of St. Lucie Unit-2 steam generator tube-wear indications - and the modifications made to certain and specific tubesheet and tube support components and other components (such as removal of the stay cylinder) from the St. Lucie Unit-2 steam generators – the license cannot demonstrate any measure of reasonable assurance that the St. Lucie Unit-2 nuclear reactor will be operated in full compliance with NRC's regulations and requirements under 10 CFR Part 50.

Moreover, because the licensee has failed to-date – to identify and to correct the ***"root-cause"*** of the continuing degradation of the St. Lucie Unit-2 steam generator tubes - the license cannot demonstrate any measure of reasonable assurance that the St. Lucie Unit-2 nuclear reactor will be operated in full compliance with NRC's regulations and requirements under 10 CFR Part 50.

Finally, to the extent that the licensee has implemented an extended power uprate at the St. Lucie nuclear Unit-2; and plugged numberous steam generator tubes - increased stress will be exerted on the degraded tubes in the Unit-2 steam generators – and significantly increase the likelyhood of a nuclear accident resulting in an unwarranted release of radionuclides into the environment – which will adversely affect public health and safety.

For all these stated reasons, the **NRC should GRANT the requests delineated in the 2.206 Enforcement Petition (as supplemented today) and issue a Confirmatory Order to the licensee requiring the licensee to maintain the St. Lucie nuclear Unit-2 in a "cold-shutdown" mode of operation - until an independent 3rd party contractor can make a full assessment of the St. Lucie nuclear Unit-2 steam generators – including a "root-cause" determination for the degradation of the steam generator tubes – and until the licensee completes any and all corrective actions.**

When this meeting concludes today, you NRC folks will return to your homes in and about the greater Washington, D.C. area and far away from the potential dangers at St. Lucie Unit-2 nuclear plant. However, I live here in Florida close to that nuclear plant and I have family and friends who also live here in Florida close to that nuclear plant. So, please think about our safety when you folks are considering the requests made in the 2.206 Petition to protect public safety and health.

Questions?