# The Nuclear Regulatory Commission's Double Standard: A Historical Overview of NRC's Inspection Requirements at Millstone 1, Turkey Point and Holtec's Palisades

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**April 2, 2026**

**INTRODUCTION:** Marc Gerstein in his book *Flirting With Disaster* examines why accidents are rarely accidental. According to Mr. Gerstein:

> *"…reasonable people, who are not malicious, and whose intent is not to kill or injure other people, will nonetheless risk killing vast numbers of people. And they will do it predictably, with awareness...They knew the risks from the beginning, at every stage ...The leaders chose, in the face of serious warnings, to consciously take chances that risked disaster...Men in power are willing to risk any number of human lives to avoid an otherwise certain loss to themselves, a sure reversal of their own prospects in the short run."*[1]

**THESIS:** The rigid safety and inspection standards previously implemented on US nuclear reactors experiencing stress corrosion cracking from poor water chemistry are being ignored by the Nuclear Regulatory Commission as applied at the Holtec Palisades reactor.

**BACKGROUND:** I began my career at Northeast Utilities (NU) with a Master Degree in Nuclear Engineering in June 1972. The nuclear regulator at the time was the Atomic Energy Commission. On September 1, 1972, at least one tube in the condenser at Millstone 1 failed which introduced salt water and soluble and insoluble chemicals directly into the nuclear reactor vessel. These chemicals caused extensive Stress Corrosion Cracking component failures and damage to the stainless steel structure within the reactor coolant system.

I was charged with analyzing how the failure occurred. Modeling the Millstone 1 accident was the toughest math problem I ever tackled. It took me 200 hours working for more than four weeks to collect the data and develop the three coupled partial differential equations that could describe how these corrosive chemicals reached the

reactor. In November of 1972, I presented my analysis to the AEC and my calculations matched almost exactly with the data Millstone had measured. Thus proving NU understood the cause of the accident.

Now 54 years later, I am an expert representing Don't Waste Michigan analyzing the chemical attacks from Stress Corrosion Cracking on the components inside the Palisades reactor coolant system and secondary systems. Palisades' chemical attacks were caused by the refusal by Holtec to allocate funds for prophylactic chemicals commonly used to prevent corrosion inside the pipes. This process is called "Wet Layup" and was ignored by Holtec for two years between 2022 and 2024. Lack of wet layup allowed corrosive chemicals to cause extensive damage to the stainless steel structure within both the reactor coolant system and steam generators (steam generators at Palisades only, as Millstone was a BWR, a Boiling Water Reactor). Both facilities experienced cracking in the reactor pressure vessel nozzle safe ends.

**ANALYSIS of Millstone and Palisades**:

Certainly there are differences between these two events separated by over five decades.

Millstone was operating at full power and shutdown within minutes of the discovery of chemical contamination. Palisades was already shut down with contamination lingering for two years.

Water chemistry at Millstone was brought back under control several hours after shutdown. Palisades operated for two years in violation of Electric Power Research Institute (EPRI) water chemistry guidelines.

Some records of water chemistry existed at Millstone. Holtec has admitted that it did no water chemistry analysis nor did it keep any water chemistry records for two years.

Oxygen levels at Millstone were believed to be low. Oxygen levels at Palisades were high because EPRI required oxygen scavengers were never added to the water.

Because some operating chemistry levels were available, including Oxygen levels, Chloride levels, and dissolved and suspended material concentrations, Millstone tried to analyze the root cause of the stress corrosion cracking in reactor components. Yet the AEC remained skeptical in the absence of hard data.

> *"Because of the very low oxygen levels present during the high chloride incident, the occurrence of any significant stress corrosion on reactor components appears remote."* ***There exist no objective facts to substantiate oxygen levels during the September 1, 1972 incident, since no oxygen samples***

> ***were taken.*** *The licensee speculated regarding oxygen levels, however, has yet to prove through valid test, specific to Millstone Point 1, what actual oxygen levels existed, or rather probably existed, during the September 1, 1972 incident.*
>
> ***Without valid confirmatory test to establish the real levels in the reactor's primary coolant at conditions equaling the September 1, 1972 incident, the conclusions made appear to be highly speculative regarding the real effects*** *of chlorides.* ***Unless substantive data is obtained to show that oxygen levels were indeed low, these conclusions of the licensee's report are without basis.*** *If the oxygen concentration levels in the reactor's coolant are found to be high, the licensee's conclusions would be shattered …* [2]

Absolutely no such chemistry records are available at Palisades because of Holtec's negligence. No root cause analysis of extensive Stress Corrosion Cracking damage at Palisades was performed.

The root cause of cracking in eight reactor coolant safe end welds that suddenly cracked between 2022 and 2024 while only one failed in the previous three decades has never been determined.

Similarly, eight-tenths of a mile of sleeves were inserted into steam generator tubes at Palisades because of more than 1,000 chemical attacks creating "indications," but no root cause of how the indications developed was ever initiated.

At Millstone, the AEC noted that Stress Corrosion Cracking was "enhanced as pH decreased"[3] yet Holtec maintained no records of pH for more than two years and has now experienced accelerated stress corrosion cracking.

It is clear that the safety standards of the Atomic Energy Commission far exceed the standards that the Nuclear Regulatory Commission is currently applying at Palisades. Back in 1972, the AEC was concerned about chemical hideout and required that, before restart, Millstone submit

> *report should establish what contaminants entered the reactor, both insolubles and solubles. The deleterious effects of each should be evaluated. Corrective action taken for each should be specified. The report should establish the contamination (chloride and others) levels in the reactor and systems and the amount of the time the systems experienced the levels of contamination.*[4]

None of the information and analysis that the AEC required of Millstone has been required by the NRC at Palisades. The NRC has been curiously silent about the need to analyze the root cause of safe end cracking and steam generator tube integrity, and instead is focusing on how Holtec intends to patch up the problems. Deleterious chemical reactions occurred at Palisades for more than two years without any records

of water chemistry and may still be occurring as crevice hideout, yet the NRC has never required that same extensive root cause analysis that it did five decades ago.

Even though there were better records and a more thorough root cause analysis at Millstone, the Atomic Energy Commission remained concerned that residual chemical hideout might cause further Stress Corrosion Cracking damage. The AEC was especially concerned about further cracking in the reactor safe ends from chemical hideout. (Note: Millstone was a Boiling Water Reactor Design so there were no concerns about steam generators.)

> *In view of the **licensee's inability to more firmly establish the oxygen concentration in the primary system** during the chloride 1 intrusion incident and the physical evidence of chloride stress corrosion cracking provided by the limited metallographic studies of primary system components, **we believe that stress corrosion cracking of austenitic stainless steel components within or comprising the primary pressure boundary could be more severe than detected and reported by the licensee.**[5]*

As a result of concerns over chemical hideout, the AEC required that Millstone be closed for reinspection one month after it restarted in March 1973.

> *In addition, we believe that the licensee should be required by regulatory management to expand his current program of investigation to clearly establish, by metallographic studies, the extent of the stress corrosion attack within the primary system as it exists today in order to provide a sound basis for resumption of operation**. We also believe that the licensee should be required to develop a program for inspecting primary system components for evidence of further stress corrosion attack or propagation of existing cracks following resumption of operations.***
>
> *A definition of all contaminants that entered the primary and auxiliary systems in both soluable and insoluable form and an evaluation of the deleterious effects, both short and long term, of each contaminant and **the bases for determining that the systems are now free of contaminants.**[6]*

Furthermore, the AEC mandated a second complete shutdown in December of 1973,[7] after only an additional five months of operation.

It is obvious that the NRC has implemented a lower safety standard for the restart of Palisades than the AEC required for the restart of Millstone 1 five decades ago. There exist no chemical data, no chemical analysis, no root cause analysis and no logical reason why the NRC requirements applied for the Palisades reactor restart should not meet the same periodic reinspection restart criteria that Millstone 1 was required to meet by the AEC in 1972.

**ANALYSIS of Turkey Point and Palisades:**

For those who might believe that comparing a Boiling Water Reactor that went on line in 1970 to a Pressurized Water Reactor that started up in 1971 could be an inappropriate analogy, I offer yet another comparison. Turkey Point Unit 3 (TP3) is a Pressurized Water Reactor that began operation in 1972. In September 1976, the TP3 steam generator tube sprung a leak of radioactive water measuring approximately 30 gallons per minute.[8] The root cause of the extensive steam generator stress corrosion cracking was determined to be poor water chemistry.

The regulatory record is replete with questions and concerns from the NRC followed by responses from Florida Power and Light (FPL) about the degraded condition of the steam generators at Turkey Point. Over a period of several years, the NRC shortened the inspection interval for tubes in the steam generators, ultimately requiring an inspection shutdown once every six months.

Steam Generator stress corrosion induced damage from poor water chemistry was so substantial and related tube plugging was so extensive at both TP3 and TP4 that the NRC allowed an increased maximum plugging limit of 25% in each unit in May of 1980.

> *These amendments incorporate the results of a revised ECCS analysis for a steam generator tube plugging level of 25%.*[9]

On July 30, 1980, the Nuclear Regulatory Commission issued Amendment 59 to the TP3 license requiring a complete steam generator tube inspection because of stress corrosion cracking while allowing TP3

> *continued operation…for* ***eight and one half equivalent months*** *of operation from January 24, 1980 at which time the steam generators shall be inspected.*
>
> *…In order to perform an inspection of the steam generators, Unit No. 3 shall be brought to the cold shutdown condition within eight and one half equivalent months of operation from January 24, 1980 or at the next refueling shutdown, whichever occurs first, unless: (1) an inspection of the steam generators is performed within this period as a result of the requirements in 2, 3, and 4 above, or (2) an acceptable analysis of the susceptibility for stress corrosion cracking of tubing is submitted to explicitly justify continued operation of Unit No. 3 beyond the authorized period of operation. Any analysis justifying continued operation must be submitted at least 45 days prior to the expiration date of the authorized period of operation. For the purpose of this requirement, equivalent operation is defined as operation with a primary coolant temperature greater than 350°F. NRC approval shall be obtained before resuming power operation following this inspection.*[10]

Again in October 1980, the NRC insisted on again shortening the operation interval by requiring yet another steam generator tube reinspection, this after only 6 months of operation.

> *In order to perform an inspection of the steam generators, Unit No. 3 shall be brought to the cold shutdown condition within **six equivalent months of** operation from October 24, 1980 or at the next refueling shutdown, whichever occurs first, unless: (1) an inspection of the steam generators is performed within this period as a result of the requirements in 2 , 3 and 4 above, or (2) an acceptable analysis of the susceptibility for stress corrosion cracking of tubing is submitted to explicitly justify continued operation of Unit No. 3 beyond the authorized period of operation. Any analysis justifying continued operation must be submitted at least 45 days prior to the expiration date of the authorized period of operation. For the purpose of this requirement, equivalent operation is defined as operation with a primary coolant temperature greater than 350°F. NRC approval shall be obtained before resuming power operation following this inspection.*[11]

Both Turkey Point Unit 3 and Unit 4 experienced extensive stress corrosion damage of their steam generator tubes. On June 24, 1981, the NRC Atomic Safety and Licensing Board issued a Final Order dated June 19, 1981 that identified a long litany of correspondence concerning the degraded condition of the TP4 steam generators beginning in September 1977 stating:

> *The Turkey Point Plant steam generator repair program, described in the licensee's "Steam Generator Repair Report" dated September 20, 1977, as supplemented, on December 20, March 7, April 25, June 20 and August 4 ,1978, January 26, 1979 and March 28, 1980, and the affidavit of A.J. Gould dated June 12, 1981, for Unit No. 4 is approved pursuant to the Atomic Safety and Licensing Board Final order dated June 19, 1981…FPL should verify that the steam generator secondary water chemistry control program incorporates technical recommendations of the NSSS [Nuclear Steam Supply System] vendor. Any significant deviations from NSSS vendor recommendations should be noted and justified technically.*[12]

Based on this series of NRC required reinspections, in February of 1981, TP3 was shut down to replace its three Steam Generators in a 14 month outage. FPL "determined that any further plugging would result in a derating of the power level and subsequent financial consequences."[13] TP4 replacement followed approximately one year later.

It is obvious that the NRC has implemented a lower safety standard for the restart of Palisades than the NRC required for the restart of Turkey Point 3 five decades ago. There exist no chemical data, no chemical analysis, no root cause analysis and no logical reason why the NRC requirements applied for the Palisades reactor restart

should not meet the same periodic reinspection restart criteria that Turkey Point 3 was required to meet by the NRC in 1976.

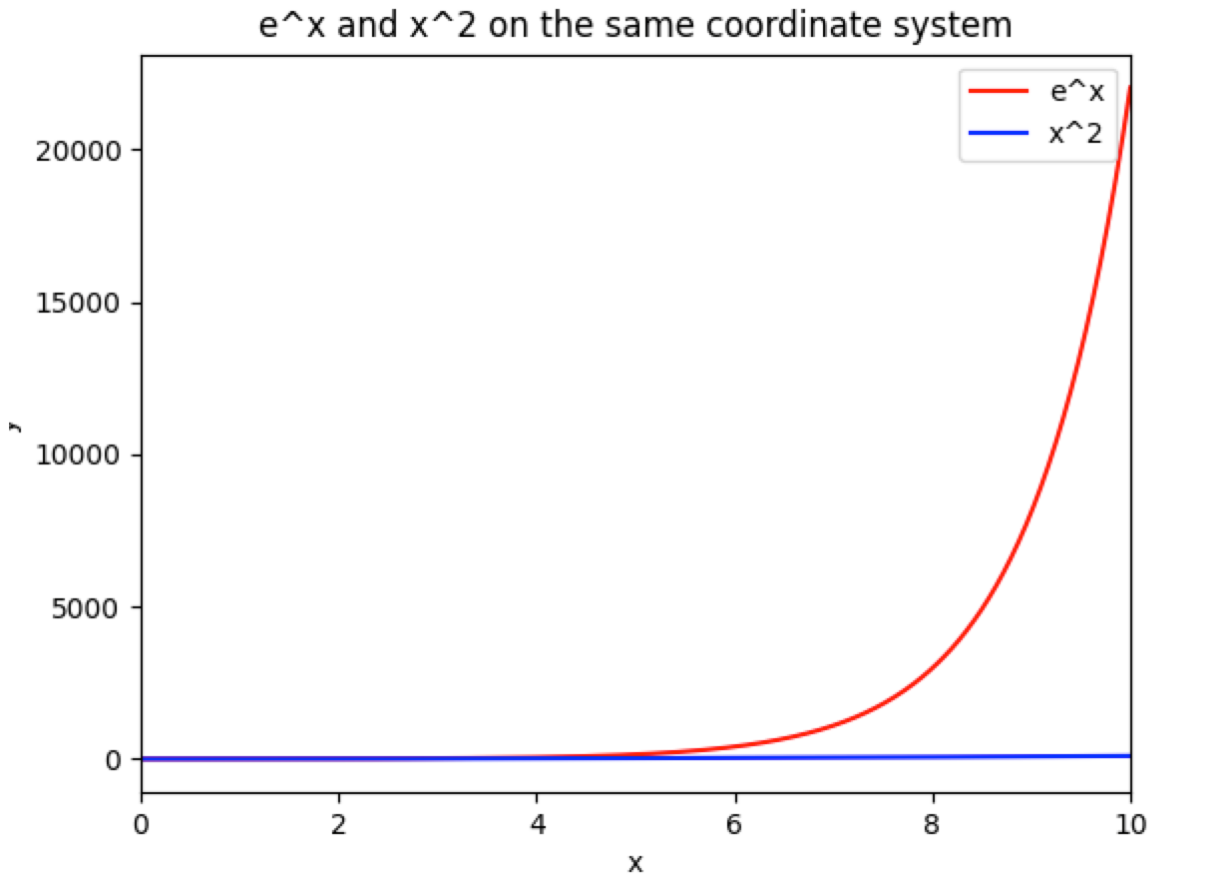
**Survivor Bias: Holtec's New Palisades Steam Generator Analysis**

The history of filings to the NRC ASLB (Atomic Safety and Licensing Board) and ACRS (Advisory Committee on Reactor Safeguards) by Beyond Nuclear, Don't Waste Michigan, *et al.* (BN/DWM) concerning the degraded condition of Palisades' steam generators is a matter of record. That record is replete with technical analysis and warnings that SG tube leaks or tube failures were inevitable within a 1.5 effective full power year (EFPY) refueling cycle, or approximately 18 months of full power operation. Those warnings were ignored by the NRC. Holtec belittled that assessment and stated that a normal 18 month refueling cycle would provide adequate assurance that the steam generators would operate safely with no leaks or ruptures.

Yet in a March 19, 2026 filing with the NRC,[14] Holtec has agreed with BN/DWM's assessment that steam generator failure is indeed likely if Palisades is allowed to operate for 18 effective full power months. In its latest filing, Holtec now suggests that it can only be assured that Palisades will safely operate for 1.2 EFPY or approximately 14 months without steam generator tubes leaking or bursting. BN/DWM is pleased that Holtec now partially agrees with BN/DWM's previous assessment that Palisades' steam generators have been damaged and are likely to fail. Framatome/Holtec notes that the longer Palisades operates, the more likely a tube burst will occur and that the burst probability skyrockets ***exponentially the longer Palisades operates***.

> *This illustrates that the Probability of Burst* ***exponentially increases*** *as the run time for Cycle 29 increases as well****. Operation beyond 1.2 EFPY cannot be justified*** *with the current model (section 6.2.3.7).*

Exponential growth is much more dangerous than quadratic growth. Below is a visual comparison of the difference between quadradic growth and exponential growth:




As stated in numerous previous filings with the NRC, BN/DWM continues to insist that Holtec's current shortened inspection interval suggestions remain grossly inadequate to protect public health and safety.

It is important to look at the dates when Framatome, Holtec and the NRC became aware that the likelihood of steam generator failure was greater than previously acknowledged. The latest filing proves that Holtec delayed sending the Framatome report for 97 days after Holtec received it from Framatome in December 2025. However, the Holtec cover letter (3/19/2026) notes that on October 14, 2025, analysis of further tube degradation was well underway before the NRC requested the conference call with Holtec and Framatome.

> *During the call, the Framatome and Holtec Palisades representatives advised the NRC that the Eggcrate model provided in the Palisades Steam Generator Operational Assessment for Cycle 29 (Framatome document 51-9394013-002) was being revised to determine the sensitivity of various inputs and provide additional conservatisms to the benchmarking process of the Operational Assessment.*

> *The purpose of this letter is to submit the final (Proprietary) Palisades Steam Generator Operational Assessment for Cycle 29 (Framatome document 51-9394013-004), which includes the revised Eggcrate model information and results, and to also provide a public (NonProprietary) version of the Operational Assessment (Framatome document 51-9401416-000).*

Holtec and Framatome advised the NRC about revisions to the Eggcrate model on a conference call on October 14, 2025. Then Holtec received the final Framatome report on December 12, 2025. Yet Holtec never formally informed the NRC until March 19, 2026. That is 156 days from the conference call until the formal Holtec letter and 97 days after Holtec received the final Framatome report. It seems that the licensing expediency Holtec has been requesting from the NRC is belied by their delay in identifying and providing documentation of a safety problem to the NRC!

Before addressing the specific problems within the Framatome analysis, there is a logical trap that Framatome has fallen into. Engineers call this mistake "Survivorship Bias." The literature on Survivorship Bias is extensive and I have no intention of citing all the references here. This is a short explanation directly from Google:

> *Survivorship bias is a logical error where focus is placed only on surviving, successful examples (the "survivors") while ignoring failed, invisible, or lost data points. This cognitive shortcut leads to skewed, overly optimistic conclusions because the analysis fails to account for the entire population, often overestimating the probability of success.*

The Holtec/Framatome analysis falls into this logical trap on Palisades. There are hundreds of examples of steam generators being inspected and dozens of examples of steam generators being sleeved successfully. But Palisades does not match that cohort of those successes:

1. The SGs are extraordinarily old, installed in 1991.

2. The SGs contain an alloy (Inconel 600) that is no longer considered acceptable in new applications.

3. Most SGs in the Framatome inspection cohort do not contain Inconel 600.

4. For more than two years the SGs were immersed in water that did not meet EPRI water quality standards on either the primary or secondary side nor were any chemistry records measured during that period.

5. Oxygen scavenging and pH controls were not implemented.

6. When finally inspected in 2024, the damage rate on Palisades' tubes was 250 times greater than the historical average.

The confluence of these six factors implies that comparing Palisades to the fleet historical record is a fool's errand. Holtec/Framatome's analysis focuses on steam generators that survived in conditions unlike those at Palisades since 2022. Steam generators that are not in the "normal" cohort, some of which include Turkey Point 3 & 4, Watts Bar 1 & 2, and Indian Point 2, all did fail prematurely, were made of Inconel 600, and are not part of the Framatome analysis. Holtec/Framatome acknowledges that they are benchmarking their analysis against historic norms on page 27 when they state:

> *Agreement of calculations with past and current observed inspection results (i.e., benchmarking) serves to validate the approach and the accuracy of projected states of degradation… A fundamental point of a multi-cycle OA [Operational Assessment] is that the model results must benchmark the results of current and past inspections, as mentioned above. This requires an iterative process where inputs are adjusted and the model is run until the modeled results of previous inspection(s) bounds the actual results. Only when, at a minimum, the previous inspection is bounded can the results for the projected inspection be regarded as valid. In certain instances, inputs such as POD, growth rates, or others are adjusted from their nominal values to accomplish this benchmark. This approach was used in refining certain inputs…*
>
> [and again on page 29]*...Palisades outages 1R20 through 1R29 [refueling outages, cycles 20 to 29] were simulated 50,000 times for varying Cycle 29 run times while benchmarking the detected eggcrate, vertical strap and freespan axial ODSCC [Outside Diameter Stress Corrosion Cracking] indication history.*

**SPECIFIC PROBLEMS WITH THE FRAMATOME REPORT**

1. Executive Summary, page 9: Framatome chose to exonerate Holtec and blames Entergy for the degraded condition of the Palisades steam generators, stating:

   > *Another conservative approach was to assume that no degradation was caused by the 2-year period of uncontrolled chemistry layup. Instead, this evaluation assumed that all 1D28 [D indicates Decommissioning phase] flaws were initiated and grew to their EOC [End of Cycle] size during the operating cycle 28 period*.

   When Framatome and Holtec identified significant steam generator damage at Palisades in 2024, Holtec had been the owner of the facility since 2022. The damage measured in 2024 was 250 times greater than the damage in 2020 when Entergy last inspected the steam generators. Blaming Entergy hardly seems "conservative" and ignores the poor water quality caused by Holtec because of inadequate wet layup.

2. Executive Summary, page 9: Holtec/Framatome acknowledges that, even with the shorter 14 month inspection interval, the probability of loss of structural integrity is 5%.

> *Therefore, for a maximum projected cycle length of 1.2 EFPY all damage mechanisms are predicted to not exceed structural integrity or leakage integrity limits based on a probability of burst and probability of leakage of 0.05 where probabilistic models were used.*

3. Assumptions, page 10: While acknowledging that between 2022 and 2024 the steam generators experienced *uncontrolled layup chemistry*, Holtec/Framatome assume that Entergy caused the damage and that Holtec was not responsible for any of it.

> *The analysis assumes all the ODSCC [Outside Diameter Stress Corrosion Cracking] growth occurred only during the last operating cycle and not during the shutdown period of uncontrolled layup chemistry. Assuming the growth to have occurred over a much shorter interval of just the last operating cycle results in calculated growth rates in excess of the industry-based default alloy 600MA ODSCC [Outside Diameter Stress Corrosion Cracking] growth rates.*

4. Assumptions, page 10: While BN/DWM acknowledge that the “A” steam generator is worse than the “B” steam generator, Framatome has only determined the likelihood that the “A” steam generator (SG) will fail. The degraded condition of the “B” SG is a non-zero probability independent of the conditions in the “A” SG. Therefore the overall likelihood of tube leakage or tube failure is AT LEAST 5% and could approach 10% if both steam generators were included in the probabilistic analysis.

> *For all SCC [Stress Corrosion Cracking] mechanisms SGA [Steam Generator “A”] was the more limiting SG in terms of number of flaws and severity of flaws identified in 1D28; therefore, the OA [Operational Assessment] was performed on SGA only and is bounding of SGB [Steam Generator “B”].*

5. Deplugging, Page 11: Without NRC formal approval, Holtec removed 466 plugs made of alloy 600 and replaced 199 of those plugs with alloy 690. There is nothing in the licensing record that allows this exchange of plug alloys to be accomplished.

> *Additionally, 466 alloy 600 plugs were removed from both SGs with another 199 alloy 600 plugs replaced with alloy 690 plugs.*

6. Tube plugging for future tracking, page 13: Sleeve installation issues occurred in the “A” SG, but the Project Engineer recommended that those damaged tubes

remain in service. There is no indication of what criteria was used to override the need for plugging in tubes that could not be sleeved.

> *During the sleeving process the tubes in Table 5-6 had issues that, in the future, will require plugging upon detection of an indication at any location of the parent tube, including the mid-section, behind specified sleeves*.

7. Return to service Indications and Growth Rates, page 21: Holtec/Framatome assumes indications will grow at historical growth rates and has made no provisions to analyze for chemical attack due to crevice hideout.

> *One of the underlying assumptions implemented within the full bundle OA [Operational Assessment] model is that growth rates going forward are random with respect to the current wear depth and they are applied to all flaws returned to service. The full bundle model conservatively assumes that all tubes with support wear less than 40%TW [Through-Wall] were returned to service following 1D28, even though some tubes that were plugged during 1D28 did contain (non-repairable) support wear. The growth rate distributions for SGA and SGB support wear are shown in Figure 6-6. These distributions were used in the evaluation to develop a bounding Kunin growth rate distribution. Due to the consistent growth rates in each SG over the past couple inspections, combined SG specific growth rates were used:*
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> • *SGA average wear growth rate: 0.43%TWD/EFPY [Through-Wall Depth/Effective Full Power Year] with a 95th percentile growth rate of 3.18%TWD/EFPY*
>
> • *SGB average wear growth rate: 0.33%TWD/EFPPY with a similar 95th percentile of 3.18%TWD/EFPY.*

8. PWSCC [Primary Water Stress Corrosion Cracking] within the Tubesheet, page 63 and 68: BN/DWM have always suggested that hideout in steam generator crevices is likely because of Holtec's egregious failure to maintain water chemistry between 2022 and 2024. This hideout will exacerbate chemical attacks as temperature and pressure inside the SGs increases. That crevice attacks were exacerbated because of Holtec's inattention to proper water chemistry is indeed mentioned in the report. In 2024, 61 indications were discovered in the tube sheet, compared to 14 indications in the thirty years between 1991 and 2020. The evidence clearly suggests that chemical attacks in the tube sheet crevices were indeed occurring for the first two years of Holtec's ownership. Yet Holtec/Framatome knowingly ignore ruptures or failures from hideout and instead rely on the historical record under Entergy ownership stating:

> *Tube rupture as a result of axial cracks located fully within the tubesheet expansion is not possible due to the structural support provided by the tubesheet…Sixty-one (61) axial PWSCC indications were identified within the tubesheet during the 1D28 outage inspection. This mechanism was infrequently observed prior to 1D28, with only 14 axial PWSCC indications previously identified in this region through 1R27 (including expansion transition)...*
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> *[and from page 69]...Palisades outages 1R20 through 1R29 were simulated 50,000 times while benchmarking the detected TS [Technical Specification] axial PWSCC indication history.*

**CONCLUSIONS:**

The Atomic Energy Commission's concerns over stress corrosion cracking caused by poor water chemistry of the safe end welds at Millstone Unit 1 compelled the agency to require a one month reinspection and a five month reinspection at Millstone after restart.

Similarly, the Nuclear Regulatory Commission felt compelled to require a six month reinspection interval for stress corrosion cracking caused by poor water chemistry in Turkey Point's steam generators.

Meanwhile, poor water chemistry for more than two years at Palisades has created greater than 1,000 steam generator indications caused by stress corrosion cracking and also cracks in eight reactor safe end welds. Yet the NRC seems to be blissfully unconcerned about analyzing the root cause of this additional damage at Palisades. Furthermore, both Millstone 1 and Turkey Point 3 were placed on accelerated reinspection intervals because of concerns that the stress corrosion cracking would continue to unfurl. No accelerated reinspection interval is indicated as Palisades nears its restart.

Holtec/Framatome have reached the same conclusion that SG damage is inevitable as Beyond Nuclear/Don't Waste Michigan, *et al.* That conclusion proves that operating Palisades for a single 18 month refueling cycle is unsafe. Holtec/Framatome acknowledge that the safety risk increases EXPONENTIALLY the longer Palisades operates. However, BN/DWM notes that Holtec/Framatome's analysis is flawed by ignoring Survivorship Bias and severely underestimates the risk if Palisades is allowed to begin operation again.

The potential for EXPONENTIAL DAMAGE and the lack of implementation of AEC's (Millstone) and NRC's (Turkey Point) historical precedents for root cause analysis and repeated frequent reinspection intervals must be applied at Palisades.

***END NOTES:***


1. *Flirting With Disaster: Why Accidents Are Rarely Accidental,* by Marc Gerstein with Michael Ellsberg, Union Square Press, C 2008. P286-289
2. https://www.nrc.gov/docs/ML2008/ML20085C075.pdf
3. https://www.nrc.gov/docs/ML2008/ML20084F237.pdf
4. https://www.nrc.gov/docs/ML2008/ML20085C164.pdf
5. https://www.nrc.gov/docs/ML2008/ML20085C082.pdf
6. https://www.nrc.gov/docs/ML2008/ML20085C201.pdf
7. https://www.nrc.gov/docs/ML2008/ML20085A019.pdf
8. *Nucleonics Week*, 4/29/82, Page 7
9. Letter from Varga NRC to Uhrig FPL, May 15, 1980
10. Letter from Varga, NRC to Uhrig FPL, July 30, 1980
11. Letter from Varga NRC to Uhrig FPL, October 30 1980
12. Letter, from Varga NRC to Uhrig FPL June 24, 1981
13. *Nucleonics Week*, 4/29/82, Page 7
14. https://www.nrc.gov/docs/ML2607/ML26078A195.pdf:
    Holtec Palisades letter PNP-024 to NRC, March 19, 2026, Engineering Information Record Document No. 51 - 9401416-000, Palisades Steam Generator, Contains as an attachment, Framatome Operational Assessment for Cycle 29, Dated 12/12/2025