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**PILGRIM WATCH REPLY TO PROPOSED DIRECTOR'S PROPOSED DECISION
UNDER 10 CFR 2.206 [7590-01-P] - DOCKET No. 50-293 (April 19, 2013)**

On March 20, 2013, the Director of the Division of Operating Reactor Licensing sent Pilgrim Watch (hereinafter "PW") the NRC staff's Director's Proposed Decision and asked that PW, within thirty days, provide comments with respect to errors and issues not addressed in that Proposed Decision.

The Proposed Decision (at 13) denied PW's Petition, saying that the:

"NRC Staff has determined that the licensee programs for cable monitoring and managing aging effects of inaccessible power cables have been properly implemented to the extent that reasonable assurance that cables subject to moisture will be adequately managed during the period of extended operations. The NRC did not identify any violations of regulatory requirements during its review."

Paraphrasing PW's requests, the Proposed Decision also denied (Id., 12-13) PW's requests that the NRC:

- (i) "Issue a Demand for Information to require Entergy to demonstrate that all inaccessible cables at Pilgrim are capable of performing their functions,"
- (ii) "[C]ertify that all cables have been identified as to their locations, age and repair history,"
- (iii) "[C]ertify that ... all cables are monitored by the Licensee before continued operation," and
- (vi) "[C]ertify that ... the Licensee's monitoring program at a minimum, recommendations from certain aging management guidelines and NRC generic guidance."¹

¹ PW's petition specifically identified these "certain" guidelines and recommendations: "the recommendations of SAND 96-0344, Section 6 (Aging Management Guideline for Commercial Nuclear Power Plants-Electric Cable and Termination, prepared by DOE and sponsored by DOE and EPRI, Sept. 1966) and the recommendations in NEC Generic Letter 2007-01" (PW Petition, p. 15)

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A further request in PW's Petition was mentioned only in the introduction to the Proposed Decision (Id., 2). It said that

"The NRC commit to verifying, during the license renewal period, Entergy's implementation through routine baseline inspections and to a timely upgrade of the regulatory guidance for maintaining cable quantification and the verification that the cables can perform their design functions."

In denying PW's Petition, the Proposed Decision made no assurances, no certifications and no commitments.

PW's fundamental "comment" is that the Proposed Decision fails to consider both issues and facts raised by PW, and also facts that the NRC plainly should have known and considered on its own.

The Proposed Decision refers to the Pilgrim License Renewal, but there is nothing to show that the Proposed Decision considered the facts provided in and issues raised by PW's Requests for Hearing in that license renewal - despite the fact that PW's February 4, 2011 filing in *this 2.206 Petition* included copies of those requests and specifically pointed out that "both requests provide updated information that pertains not only to aging management going forward but also to current operating issues."²

The Proposed Decision also largely ignores the pages of critical facts that Pilgrim's Petition and August 6, 2010 supplement set forth and supported. Since the Proposed Decision nowhere disputes them, the only reasonable conclusion is that the facts that PW presented in its Petition (and its two supplements that include PW's Requests for Hearing) are correct.

As for other facts and issues the Proposed Decision should have considered, on April 8, 2013 PW sent NRC's Region I Administrator William Dean a number of questions regarding

² As those responsible for the Proposed Decision should have known, none of those facts and issues were considered in the Pilgrim license renewal proceeding. However, essentially the same contentions were accepted for hearing in the now on-going licensing proceeding for Indian Point.

Pilgrim's non-EQ inaccessible cables and what the NRC knew about them.³ To date the only response is a brief email from Ron Bellamy. PW, on April 10, 2013, asked that the time for providing its comments on the Proposed Decision be extended until answers to the questions have been provided; there has been no response to that request.

In deciding a 2.206 Petition, the NRC has obligations factually to consider and address the facts that it knows and what PW actually presented and requested, and to demonstrate a reasoned factual basis for its conclusion.⁴ The generalized (and highly questionable) broad brush statements in the Proposed Decision are unsupported by any specifics, and the Proposed Decision fails to consider important material facts and important issues that PW raised. This Proposed Decision does not do so.

For these reasons, Pilgrim Watch requests that the Proposed Decision be thoroughly reconsidered and revised - to consider all of the facts and issues and grant PW the substantive relief requested in its Petition.

A. THE PROPOSED DECISION LACKS THE REQUIRED BASIS⁵

As indicated above, the Proposed Decision simply does not address many issues and facts raised by PW, or consider much of what the NRC should know. For example, despite PW's specific request (See PW August 6 Supplement, 1), the Proposed Decisions never says whether Pilgrim's non-EQ cables have all been identified, much less is there any statement that all have or

³ The questions posed to Mr. Dean are attached as Appendix A. The importance to the Proposed Decision of the facts they seek to elicit is discussed below.

⁴ Is this just another chapter in the NRC's history of consistently denying petitions under 2.206, apparently relying on its ill-considered (and legally highly questionable) rule precluding review to justify abdicating its obligations to protect the public health and safety and to elucidate the reasons that it believes justify denial of essentially 100% of the petitions it has considered?

⁵ The Proposed Decision tried to arrange the concerns that PW in three categories- cable reliability and monitoring, wet/submerged environments, and aging management. These are specifically addressed in Sections B-D, below.

will be regularly inspected. Indeed, the Proposed Decision includes no specifics as to the age,⁶ number, voltage classes and types of cables, including insulation type.

Neither does it attempt to present any facts showing that all non-EQ cables will be monitored to ensure that they will be able to perform their intended functions, that the Licensee will follow the NRC's minimum recommendation, or that the NRC will do anything to verify that Entergy actually implements what the NRC recommends and requires.

Rather than providing the essential factual inquiry and analysis, the Proposed Decision simply quoted its rules and Entergy's supposed procedures, referred to a few old inspection reports, and cited NRC license renewal conclusory findings. There is no real consideration of the *undisputed* facts that Pilgrim and other NRC licensees have encountered significant wet/submerged cable incidents in the past (See Proposed Decision, 6-8; PW Petition, 5-7; PW Supplement, 2, 11-12; PW Supplement PW's Request for Hearing in Pilgrim's License Renewal Adjudication Process, 22, 23), that more problems must be expected in the future ("The NRC acknowledges ... that cables that are not designed to operate in a submerged condition are likely to experience early failures, which can potentially result in significant safety consequences", Proposed Decision, 6), and that Pilgrim's "corrective actions were not sufficient to preclude these cables from being submerged." (NRC Inspection Report 05000293/2010003, quoted at p. 2 of PW's Petition)

The Proposed Decision says that "the Licensee's Cable Reliability Program [is] an acceptable procedure" (Id., 10), but provides no facts to support this.⁷

⁶ Even qualified cables are qualified by their manufactures for only a 40 year service life (PW supplement, 8). Pilgrim has outlived that.

⁷ To the extent that the Proposed Decision places any reliance on what the staff did in connection with Pilgrim's License Renewal (Proposed Decision, 10-11) that is misplaced. PW's petition discusses the inadequacy of Pilgrim's AMP and SER at some length (Pilgrim Petition, 7-14) The ASLB never considered PW's contention challenging the adequacy of the Staff's evaluation on its merits, but has accepted New York's opposition to relicensing Indian Point on, among others, the same grounds. (PW Petition, 7)

The one thing that is clear from the concluding sentence of Section A of the Proposed Decision is that all the NRC apparently did to reach its generalized conclusion there was to review regulations in Criterion XI, Entergy's Manual EN-DC-346 "Cable Reliability Program," reference RG 1.218, and one Inspection Report.. (Proposed Decision 5)

The failure of the Proposed Decision to look beyond paper to reach its summary conclusions is particularly egregious given that the only real facts the Proposed Decision apparently considered (to say nothing of the undisputed facts that it ignored) are contrary to it.. The Proposed Decision admits that "the NRC staff determined that the inaccessible or underground power cables are no longer inherently reliable as initially thought during the implementation of the NRC's maintenance rule" and that "it is necessary to monitor the condition of electric power cables throughout their installed life through the use of cable-monitoring techniques, as described in RG 1.218" (Proposed Decision, 9-10).

To determine whether the NRC somehow nonetheless had a real factual basis for the Proposed Decision's conclusion that there is reasonable assurance, on April 8, 2013 PW sent NRC's Region I Administrator William Dean a number of questions regarding Pilgrim's non-EQ inaccessible cables and what the NRC knew.⁸

The facts that these questions seek to determine are highly material to the issues and concerns that PW specifically raised in its petition. Presumably, many of these facts were known to the NRC and should have been considered by the NRC in reaching its Proposed Decision. Nothing in the Proposed Decision gives any indication that they were.

⁸ The questions posed to Mr. Dean are attached as Appendix A.

Until those questions are answered,⁹ and the NRC knows and considers both the facts that they elicit and the facts that PW raised in its Petition and Requests for Hearing, the Director has no proper basis to make any decision on PW's Petition. The Staff and the Director should have obtained and considered all the facts. Assuming for sake of discussion that the real facts might somehow support the Proposed Decision, the Proposed Decision also should have shown how they do so.

Before making any final decision on PW's Petition, the NRC must actually consider the highly material facts - both those that PW presented in its Petition, including PW's Requests for Hearing in the License Renewal Adjudicatory process, and those raised by PW's April 8, 2013 questions to William Dean, Region I Administrator. Any proper decision must show that it has done so.

The NRC must also provide specific support for its numerous conclusory statements, and actually address each of PW's requests.

⁹ As noted above Ron Bellamy provided a little information in April 11 email to Mary Lampert: "Approximately 20 manholes are included in this program, and six of the manholes were the subject of temporary modifications to install sump pumps to automatically pump down the manholes before water impacts the cables in these manholes. Modifications to permanently install dewatering systems are scheduled. You specifically asked about inspection of manholes following storms. There is an Entergy procedure that requires the manager responsible for the cable program to be notified, and his actions are to access the weather conditions, recent inspections, upcoming inspections, and recommend additional actions."

Unfortunately, Bellamy's email not say whether these 20 manholes are the only ones at Pilgrim that contain non-EQ electric cables, and its implication that simply putting sump pumps in 6 of the 20 and some unidentified future modifications will solve the problem is hardly reassuring. Equally unreassuring the unquestioned assumption that having some Entergy manager look at the weather and past and present inspection plans will result in necessary actions actually being taken when they should.

B. AGING MANAGEMENT OF INACCESSIBLE CABLES (PROPOSED DECISION, SECTION C)¹⁰

In Section C, the Proposed Decision principally relied on NRC evaluations made in connection with Pilgrim's license renewal in which the staff, improperly, found that Pilgrim's Aging Management Program (AMP) during license extension and Commitments provide reasonable assurance. What the Proposed Decision forgets is that PW challenged these. PW's challenge in the licensing procedure was denied on procedural (timing), and not substantive grounds.

As noted above, on February 4, 2011 PW filed *in this 2.206 Petition* copies of Pilgrim Watch's December 2010 and January 2011 Requests for New Hearing in the relicensing proceeding. PW's February 2011 filing here specifically pointed out that "both requests provides updated information that pertains not only to aging management going forward but also to current operating issues."

The Proposed Decision shows no evidence that anyone even read that February filing or the Requests for Hearing, much less that any of the facts and issues there raised were considered. The proposed Decision fails to respond to facts raised by PW and that the NRC should have known. Instead, it apparently (and incorrectly) assumes that the NRC's evaluations in the licensing proceeding had never been challenged, or that any challenge made had been substantively considered by the ASLB. As those responsible for the Proposed Decision should have known, the facts and issues presented by PW's Requests for Hearing were never substantively considered in the Pilgrim license renewal proceeding; essentially the same

¹⁰ Much of what is said in this section_ is equally relevant to understanding what is wrong with the Proposed Decision's discussion of concerns raised by PW's request for enforcement action-cable reliability and monitoring (Section A of the Proposed Decision, Section C, below) and wet/submerged environments (Section B of the Proposed Decision, Section D, below).

contentions have accepted for substantive hearing in the now on-going licensing proceeding for Indian Point.

In addition to ignoring the facts and issues presented to it in PW's February 2011 filing, the Proposed Decision also largely ignores the pages of critical facts that Pilgrim's 2.206 Petition and August 6, 2010 supplement set forth and supported.

Since the Proposed Decision nowhere disputes them, the facts that PW presented in its Requests for Review, and in its 2.206 Petition (and its two supplements), must be taken as correct.

In sum, the Proposed Decision failed to consider facts (presented to it by PW and that unless factually disputed in the Decision must be assumed to be correct) that demonstrate that Pilgrim's AMP will not manage the effects of aging on non-EQ inaccessible cables exposed to significant moisture.

The undisputed facts are that AMP and the Proposed Decision do not specify the location, number or age of the relevant cables, do not identify their function or the criticality of the systems they serve, do not describe their physical characteristics, do not explain the corrective action it will take if manhole inspections reveal periodic water accumulation, do not explain what cable condition monitoring tests that they will use, do not explain the criteria for determining whether a cable passes or fails a condition monitoring test, do not identify what corrective actions, if any, Entergy will take if a defective cable is found, and do not establish a protocol for trending.

Without considering these essential facts, to say nothing of other facts that the NRC should know, the Proposed Decision could not properly conclude the Entergy's AMP will insure

the continued integrity and function of the non-EQ inaccessible cables that are exposed to significant moisture during extended operations.

2. Material Undisputed Facts Set Forth in PW's Request for Hearing (Submitted As Part of this 2.206 Petition) and Not Addressed by the Proposed Decision

PW's Request for Hearing, ignored by the Proposed Decision, showed by its review of Pilgrim's LRA, and Commitment 15, that Entergy's Aging Management Program (AMP) is inadequate and does not properly respond to the issues outlined in IN 2010-26, requirements of 10 C.F.R.50.49 and other referenced documents. The Proposed Decision does not address or dispute facts provided in PW's Request for Hearing, and there is no basis for the Proposed Decision's apparent conclusions that there is reasonable assurance that the AMP will protect public health and safety.

a. **Replacement:** The Decision does not address that Entergy never commits to, or even mentions, replacing non-EQ cables exposed to submergence. NEMA is the US national organization that oversees all electric building codes in the USA and other countries. Its document, *Evaluating Water-Damaged Electrical Equipment*, 2006, says specifically that Non-EQ cable water damaged should be replaced. (PW Request, Blanch Decl., (Hereinafter "Blanch Decl.") 21, 24, 37) The Proposed Decision nowhere disputes Mr. Blanch's conclusion (at 37):

Cables that have been exposed to any submergence must be replaced with cables designed and qualified for underwater operation. This is my professional opinion supported by positions proffered by the electrical industry (NEMA) for commercial and industrial facilities. One would hope to believe that a commercial nuclear power plant would, as an absolute minimum comply with and far exceed these commercial standards and guidelines.

b. **Voltage:** Commitment 15 says that the "Non-EQ Inaccessible Medium Voltage Cable Program as described in LRA section B.1.19 (will) include inaccessible 400 V to 2kV cables with a license renewal intended function in this program." But on its face the "commitment"

ignores cables carrying less than 400 Volts, a fact that is nowhere disputed (See Blanch Decl., 27-29)

Commitment 15 thus excludes numerous cables that “perform a license renewal intended function and are potentially exposed to significant moisture.” Mr. Blanch says specifically that Entergy has arbitrarily redefined the scope of its cables monitoring programs thereby eliminating the majority of vital cables within the scope of 10 CFR 54.4 and 10 CFR 54.21. There are miles of cables¹¹ operating at voltages of less than 400 volts that meet the requirements defined in 10 CFR 54, yet Entergy and the NRC has failed to address any requirements for aging management for these cables and wires.” (Blanch Decl., 28)

The Proposed Decision fails to mention or explain why cables carrying less than 400 Volts can be ignored and still provide reasonable assurance.

c. **Frequency of Inspections:** The commitment says that “Cables will be tested for cable insulation degradation at least one every six years after entering the period of extended operation [and i]nspections for water accumulation in manholes containing in-scope inaccessible low voltage and medium voltage cables will be performed at least annually.” NUREG/CR-7000 BNL-NUREG-90318-2009, 4-18 (ignored by the Proposed Decision) shows that this is far too frequent:

The failure data showed a trend toward early failure, the majority occurring in the range of 11-20 years of service and 21-30 years of service; this is shorter than the plants’ original 40-year licensing period. The NRC staff noted in its conclusions that “...the predominant factor contributing to cable failures at nuclear power plants appears to be the presence of water/moisture or exposure to submerged conditions.

The decision fails to provide any factual basis to justify how the PRB found it sufficient for the Licensee to look at some unqualified cables every six years, and lift some manhole covers once a year.

For example, the Proposed Decision nowhere disputes significant facts about degradation; in fact degradation is never mentioned. The undisputed fact is that Entergy's

¹¹ Despite PW's request (Petition, pp), that the NRC identify them, the exact amount, function and location of these cables is never mentioned in the Proposed Decision and remains unknown.

proposed frequency of inspection is based on a false assumption regarding degradation. It is undisputed that the probability of corrosion is not constant with time, there is no factual basis for the Proposed Decisions apparent assumption that if some cable was inspected yesterday we don't need to inspect again for 10 years. The undisputed fact is that corrosion/degradation is a rate process and the rate is *NOT* constant with time. As a matter of fact, the *probability of degradation must be adjusted with age, and the risk is a function of age. The Proposed Decision's apparent conclusion that the entire risk management in the AMP is acceptable, ignores these facts, and is totally misguided.*

d. **Baseline Inspection, components:** The frequency of inspection cannot be properly determined absent a lack of a commitment to perform a baseline inspection of all components, not just some. Commitment 15 says in the Program description of B.1.19 (Entergy Letter No. 2.11.001, Attachment 1, page 9) “All in-scope medium voltage cables will be tested *prior to* entering the PEO and low-voltage cables will be tested *within* six years of entering the PEO.” (Emphasis added). It fails to say if the purpose is to establish a baseline; and gives no reason to exclude low-voltage cables from an inspection *prior to* permission for extended operations. The undisputed facts ignored by the Proposed Decision show that such a program is not adequate without a commitment to perform a baseline review of all cables within scope to determine the condition of the submerged non-EQ cables, *prior* to license extension and compare their present condition to what it was when installed. Absent a baseline, there is no way to assess the adequacy of the AMP and to trend degradation over time. (Blanch Decl., 42). Given these undisputed obvious shortcomings, there is no basis for the Proposed Decision's simplistic statement (at 11) that Entergy's Cable Program “was acceptable.”

e. **Baseline Inspection, environment:** Absent from the AMP is a requirement to perform a thorough subsurface hydrological-geological survey over the entire site to determine groundwater flow today as it relates to inaccessible Non-EQ cables within scope; to compare those results to the original Dames and Moore 1967 hydro study to see if locally adverse conditions are more severe than were anticipated when the plant was originally designed. Further, there is no requirement to follow up with regular subsequent scheduled subsurface surveys to track changes in groundwater flow and tides expected from, for example, onsite construction or impacts from global warming changes, 2012-2032. The decision does not mention this important fact; neither does it indicate that anyone looked at any subsurface hydrological-geological surveys performed at the site and their relevance to non-EQ submerged cables. Moreover, it ignores the NUREG/CR 7000's statement that,

It should be emphasized that the occurrence of cable system operating environments or locally adverse conditions that are unanticipated or more severe than the original plant design may constitute a design deficiency of the cable system, specifically, a potential violation of GDC 1, 4, 17, and 18. NRC regulations, such as 10 CFR 50, Appendix B, (quality assurance), the maintenance rule (10 CFR 50.65), and environmental qualification regulations (10 CFR 50.49), require that programs and administrative controls be established to monitor and detect degraded conditions on a regular basis and to promptly implement effective corrective actions and design modifications, consistent with its safety significance, so that any further cable degradation is minimized. A cable system must be designed to meet all applicable regulations and to perform its intended function in the plant environment under all anticipated operational occurrences and design basis events (4-20)

The decision similarly does not dispute that the frequency of inspections is not sufficient especially in consideration of Pilgrim's location on the shores of Cape Cod Bay; soil types (sand, silt and clay) that retain moisture (FEIS); a climate characterized by rain, snow, tidal surges, and the presence of contaminants that hasten degradation. For example, IN 2010-26 at 7 pointed out that:

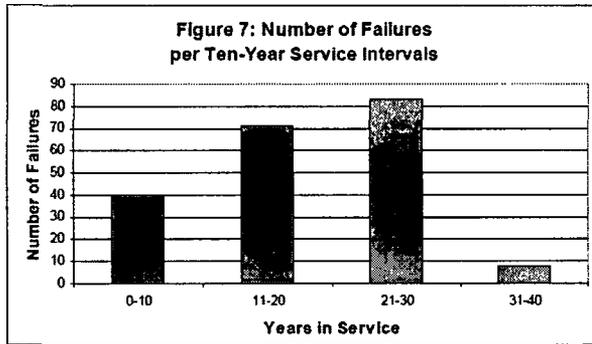
Some licensees have attempted to periodically drain the accumulated water from the cable surroundings to avoid cable failures. In some cases, the water quickly refilled the cavity in areas in which the water table was above the base level of a cable trench or underground vault. In other cases, water accumulated seasonally (e.g., because of snowfall or rain), filling conduit or raceways. In both cases, periodic draining could slow the rate of insulation degradation, but it may not prevent cable degradation

f. **Contaminants:** Neither does the Proposed Decision address nor dispute the fact that contaminants such as salt, increase degradation (Blanch Decl., 23) and the need for more frequent inspections. For example, a NEMA manufacturer said that degradation was particularly acute if (as at Pilgrim) salt water was involved.

When wire and cable products are exposed to water or excessive moisture, the components may be damaged due to mildew or corrosion. This damage can result in insulation or termination failures. *This problem can be more severe if the components have been subjected to salt water...or high concentrations of chemicals, oils, fertilizers etc.* [Blanch 20, Emphasis added]

g. **Age:** The Proposed Decision also "overlooked" that Entergy's "acceptable" Cable Program does not, as it should, link frequency of inspection to the age of the component. As shown by IN 2010-26, at 5, the likelihood of failure increases over time as the cable insulation degrades and/or is exposed to water. As shown in the following graph copied from the NRC's own study titled "Inaccessible or Underground Power Cable Failures That Disable Accident Mitigation Systems or Cause Plant Transients," the number of cable failures is rapidly increasing with age. The Proposed Decision does not dispute this fact.¹²

¹² Although it may appear that the number of failure decreases after 30 years, that overlooks that there were very few plants operating for more than 30 years. The undisputed fact is that there is no reason to suspect that the number of failures will decrease unless the requirements of 10 CFR 50.49 are imposed by the NRC now that it is recognized many inaccessible cables are being subjected to design basis events that include conditions of normal operation defined by 10 CFR 50.49. (Blanch Decl., 48).



Mr. Blanch's conclusion, that “[R]isk will increase with continued age as clearly shown by the NRC’s own published data unless the NRC is willing to implement the recommendations of industry studies and independent organizations including NEMA and NEC and its own regulations (10 CFR 50.49)” (Blanch Decl., 52), remains undisputed and unconsidered by the Proposed Decision.

h. **Inspections for Water in Manholes:** The AMP’s statement that “Inspections for water accumulation in manholes containing inaccessible low and medium-voltage cables with a license renewal intended function will be conducted at least annually” ignores the fact that not all inaccessible cables are capable of inspection by manholes.

i. **Sampling:** The Proposed Decision and Entergy's "program" are silent on sampling; there is no indication in either that the entire component will be examined. No information is provided, on the size of the sample; whether there is a requirement and if so what it is; the locations of samples; and the rationale for the sampling protocol. The Proposed Decision failed even to show that both the location and extent of non-EQ Inaccessible Cables (and any splices) in use at Pilgrim and the current groundwater flow have been identified and considered. Without addressing this factual issue, the Proposed Decision must recognize that there is no basis for determining where and what to sample.

i. **Proven Commercially Available Tests to Detect Insulation Deterioration:** Entergy's Commitment 15 and the revised Gall say that testing must be a proven method for detecting deterioration of the insulation system due to wetting, such as power factor, partial discharge, or polarization index, or other testing that is state-of-the-art at the time the test is performed, . However, the undisputed fact is that there is no "proven method" for detecting cable deterioration. EPRI, as both Sandia and Brookhaven have concluded.

The Sandia Study (SAND 96-0344) at 6.4 says:

No currently available technique was identified as being effective at monitoring the electrical aging of medium-voltage cables. Some methods may be effective at detecting severe electrical degradation or monitoring certain types of degradation (such as thermal aging); however, correlation of these measurements with the expended or remaining life of these cables has not been demonstrated.

This undisputable fact is confirmed by NUREG/CR 7000 (5.1 Conclusions):

In-service testing of safety-related systems and components can demonstrate the integrity and function of associated electric cables under test conditions. However, in-service tests do not provide assurance that cables will continue to perform successfully when they are called upon to operate fully loaded for extended periods as they would under normal service operating conditions or under design basis conditions. In-service testing of systems and components does not provide specific information on the status of cable aging degradation processes and the physical integrity and dielectric strength of its insulation and jacket materials. (Emphasis added)

In short, the Proposed Decision never mentions the undisputed facts presented by PW with respect to Entergy's AMP, and provides no factual basis for its conclusion that the AMP (or the SER discussed below) provides reasonable assurance.

3. **Pilgrim's Safety Evaluation Report (SER) NUREG-1891¹³**

The Proposed Decision referenced NRC Staff's SER related to "License Renewal of Pilgrim Station" dated June 2011 where the NRC evaluated Pilgrim non-EQ inaccessible medium voltage cable program and found it acceptable. The fact that it was found acceptable clearly should not have been any justification for the PRB to do likewise.

PNPS' June 2011 SER and Final Report (November 2007) does not support the Proposed Decision's conclusion that they provide reasonable assurance, for at least the following factual reasons that were ignored by the PRB.

a. General Design Criterion 4 in Appendix A to 10 CFR Part 50 requires safety equipment to be designed for the environmental conditions it is subjected to during normal operation and postulated accidents. 10 CFR 50.49 requires electrical equipment to be qualified for the environmental conditions it experiences during normal operation and postulated accidents. Rather than ensuing that cabling exposed to "significant moisture" is designed and qualified to operate under that condition (as required by NRC Regulations), the undisputed fact is that PNPS' SER accepts under-designed and unqualified cabling as long as one periodically checks from time to time that the cables still work (at that moment).

The most troubling aspect of the SER is on page 3-18:

In this program, periodic inspections and drainage, as needed, for water collection in cable manholes and conduit prevent cable exposure to significant moisture. The condition of the conductor insulation for in-scope medium-voltage cables exposed to significant moisture will be tested at least every ten years; the specific test type to be determined before the initial test. The program will start prior to the period of extended operation.

"The specific test type to be determined before the initial test" means that, contrary to the Proposed Decision, no test type is now specified.. Because the test is not specified, the

¹³ SER, NUREG 1891

http://adamswebsearch2.nrc.gov/idmws/doccontent.dll?library=PU_ADAMS^PBNTAD01&ID=071800054

Proposed Decision could not determine whether it is adequate or inadequate. The test might involve a mere visual examination of a dime-sized section of the cable insulation, assuming all other parts of the insulation are equally sound. Or it might be a more meaningful test. Absent a solid test, this whole exercise ends up little more than a water safari. We fail to see any factual support for any assurance that the AMP or SER provide a useful determination that exposure to "significant moisture" has not damaged the medium-voltage cables. That is, or should be, the whole point of it all.

A recent report by the NRC Office of Inspector General (OIG), *Office of Inspector General's Audit of NRC's License Renewal Program*¹⁴ made clear that neither the NRC nor the public can rely on the SER's conclusion that aging will be adequately managed so that the intended functions will be maintained consistent with the CLB over the extended period of operations. The OIG's audit showed that, among other failures, the NRC Staff's license renewal review process is weak. In Section C of the report, the OIG said that:

...most audit team members do *not conduct independent verification* of operating experience, instead relying on license-supplied information. This is because program managers have not established requirements and controls to standardize the conduct and depth of such reviews. *In the absence of conducting independent verification of plant-specific operating experience*, license renewal auditors may not have adequate assurances that relevant operating experience was captured in the licensee's renewal application of NRC's consideration. [OIG-07-A-15, at 18] (Emphasis added)

There was no evidence that Pilgrim's SER does not fit this description - no manhole cover was lifted for inspection for water or other independent verification occurred. Instead the SER at Pilgrim as described at 3-18 says that, the staff reviewed the operating experience presented in the LRA and interviewed the applicant's technical personnel to confirm that the AMP complied

¹⁴ *Office of Inspector General's Audit of NRC's License Renewal Program*, OIG-07-A-15, September 6, 2007. NRC ADAMS ML072490486

with the GALL. In other words, the staff simply reviewed what was in the LRA, asked the licensee a couple of clarifying questions and went away satisfied. Examples:

b. 3.0.3.1.5 Non-Environmental Qualification Inaccessible Medium-Voltage Cable Program

During relicensing, the staff asked the applicant to explain how it had considered operating experience for manhole inspection frequency. Entergy responded that, "... the applicant revised the program evaluation report to include the following: The inspection will be based on actual plant experience with water accumulation in the manholes and the frequency of inspection will be adjusted based on the results of the evaluation, but the frequency will be at least once every 2 years." (3-19) NRC Staff was satisfied with this response. However, Entergy provided no facts explaining how often the inspections will occur or what procedure will be used. To reach any conclusion, the PRB should consider whether inspections will be based on happenstance, convenience, or some random time period between 1-24 months.

The Staff also asked the applicant whether it inspects water in manholes under specific procedures for such inspections and, if so, for a copy of the procedures. The applicant responded that it has no formal procedure. The Staff was satisfied that Entergy in Commitment No. 15- committed to develop a formal procedure to prevent cable exposure to significant moisture. However, and as the Proposed Decision should have recognized, Entergy's commitments do not provide details – when will it be established and what will it do? The time frame and/or procedure could be unsatisfactory. At this point in time neither the NRC Staff nor the public knows these facts.

The Staff asked the applicant to revise the AMP B.1.19 program evaluation report and define significant moisture for consistency with the GALL Report's scope or to explain how inaccessible medium-voltage cable exposed to significant moisture more than a few days and

less than a few years is not susceptible to water treeing. As noted above, the Applicant revised the program evaluation report and said that, “Significant moisture is defined as periodic exposure to moisture that last more than a few days (e.g., cable in standing water). Periodic exposure to moisture that lasts less than a few days (i.e., normal rain and drain) is not significant.” There are no facts to support this contention, even if correct it does not provide reasonable assurance and NRC knows that it does not.

NRC Regulatory Issue Resolution Protocol Inaccessible or Underground Cable System Performance Issues at Nuclear Power Plants, January 21, 2010, Slide 4 (NRC Electronic Library, Adams Accession No ML100150850) says that,

Cable Aging Management Program Guides should address... All cables subjected to any level of wetting or submergence. [Emphasis added]

c. 3.0.3.1.7 Non-Environmental Qualification Insulated Cables and Connections Program

Entergy's LRA Section B.1.19 program description says:

This program addresses cables and connections at plants whose configuration is such that most cables and connections installed in adverse localized environments are accessible. This program can be thought of as a sampling program. Selected cables and connections from accessible areas will be inspected and represent, with reasonable assurance, all cables and connections in the adverse localized environments. If an unacceptable condition or situation is identified for a cable or connection in the inspecting sample, a determination will be made as to whether the same condition or situation is applicable to other accessible cables or connections. The sample size will be increased based on an evaluation per the corrective program.

PW fails to understand how this provides, or the Proposed Decision could conclude that it provide, reasonable assurance.

First, and most important, are no facts to support the assumption that accessible cables are representative of inaccessible cables. In fact it is likely that inaccessible cables have a greater probability of being degraded. Further, for the described accessible cable program, no information is provided on what basis the "determination will be made."

4. The Cable Reliability Program

The Licensee Cable Reliability Program and Inspection Report referred to in this section of the Proposed Decision similarly provide no proper basis for the Decision's "reasonable assurance" conclusion.¹⁵ As with the AMP and SER, the Proposed Decision again ignored material facts.

As discussed in more detail below (Cable Reliability and Condition Monitoring), the Proposed Decision conclusion (at 10) that "The NRC considers the licensee's Cable Reliability Program, as discussed in Section A of this director's Proposed Decision, an acceptable procedure for monitoring the condition of electric power cables" is based on unsupported generalized statements, and provides no indication that the NRC actually considered (or that those responsible for the Proposed Decision knew) many material facts.

For example, the Proposed Decision says that Entergy's program has an "objective (and) includes several testing methods that *can be* used." (Id. 5). But nothing in the Proposed Decision provides any facts to show how any of Entergy's "objectives" might be achieved. Nor does it say which of Entergy's "several testing methods" are or which actually will be used. The undisputed fact is that "no single, condition monitoring method currently available, if used alone is

¹⁵ PW notes that the Proposed Decision does not mention, and quite properly does not in any way rely on, Entergy's SER Final Report (2007). Among other things, a recent report by the NRC Office of Inspector General (OIG), *Office of Inspector General's Audit of NRC's License Renewal Program (Office of Inspector General's Audit of NRC's License Renewal Program*, OIG-07-A-15, September 6, 2007. NRC ADAMS ML072490486 made clear that neither the NRC nor the public can rely on the SER's conclusion that aging will be adequately managed so that the intended functions will be maintained consistent with the CLB over the extended period of operations.

effective;" (Reg Guide 1.218 at 4). The Reg Guide also says , "It should be noted that each of the techniques discussed (in the Reg Guide) has advantages and limitations that must be carefully considered when selecting techniques to be used in a condition-monitoring program based on plant-specific cable system design, installation, and operating condition." (Reg Guide 1.218 at 5) There is no indication that the Proposed Decision considered either this; neither did it apparently consider that a combination of monitoring techniques and inspection methods should be used on a site specific basis for effective monitoring, in its analysis.

The Proposed Decision also says, once again without any cited support, that the monitoring techniques are "consistent with methods described in Regulatory Guide 1.218" (Proposed Decision, 5) But the Proposed Decision ignores the undisputed fact that "Implementation of a program consistent with the vague guidance of the GALL revision provides no assurance that the proposed program is in compliance with NRC regulations and industry standards. GALL must clearly recognize that these cables must be addressed under the requirement of 10 CFR 50.49." (Blanch Declaration at 26) And as shown below, the Proposed Decision never attempts to say what "consistent" means, or to provide any facts to show that the Entergy "program" meets Reg Guide 1.218 requirements.

The third supposed basis for the Proposed Decision conclusions is NRC Inspection Report 05000293/2012007. But, the Proposed Decision admits that "inspection identified no significant findings (Proposed Decision, 11), and is devoid of any facts to support its apparent conclusion that what Entergy had done was acceptable. The inspection report itself says only that "Entergy had implemented commitment 15," not that, even if implemented, it would provide reasonable assurance.

The facts concerning recent incidents around the country, and at Pilgrim, involving early failures (IN 2010, IN 2002-12, Generic Letter 2007-01, “Inaccessible or Underground Power Cable failures That Disable Accident Mitigation Systems or Cause Plant Transients,” nowhere mentioned in the Proposed Decision, show that Entergy's approach to cable testing, such as in-service testing, surveillance testing, preventative maintenance, maintenance rule, etc., do not characterize sufficiently the condition of cable insulation nor provide information on the extent of aging and degradation mechanisms that can lead to failure. The Proposed Decision considers neither this actual experience, nor NUREG/CR 7000 (5.1 Conclusions):

In-service testing of safety-related systems and components can demonstrate the integrity and function of associated electric cables under test conditions. However, in-service tests do not provide assurance that cables will continue to perform successfully when they are called upon to operate fully loaded for extended periods as they would under normal service operating conditions or under design basis conditions. In-service testing of systems and components does not provide specific information on the status of cable aging degradation processes and the physical integrity and dielectric strength of its insulation and jacket materials. (Emphasis added)

C. CABLE RELIABILITY AND CONDITION MONITORING (PROPOSED DECISION, SECTION A)

The Proposed Decision concludes (at 10) that “The NRC considers the licensee’s Cable Reliability Program, as discussed in Section A of this director’s Proposed Decision, an acceptable procedure for monitoring the condition of electric power cables.” PW disagrees with that assessment. Equally important, the Proposed Decision based its conclusions on unsupported generalized statements, and provides no indication that the NRC actually considered (or that those responsible for the Proposed Decision knew) many material facts brought forward in the Petition and two supplements (one which included PW's Requests for Hearing).

Beyond that, the statement in the Proposed Decision that “The Petitioner is concerned that Pilgrim does not have a program, as required by NRC regulations, to ensure operability of submerged or wetted wires” (Proposed Decision, 4) mischaracterizes PW's petition. By mischaracterizing PW's reason for filing the Petition, those writing the Proposed Decision were led, or preferred, to answer the wrong question.

PW is fully aware that Entergy has a written program. PW's concern is not that there is *no written* program; rather it is that there is nothing to show that Entergy's *written* program is or will be sufficient. (Pilgrim Watch 2.206 Petition Regarding the Inadequacy of Entergy's Management of Non-Environmentally Qualified Inaccessible Cables & Wiring at Pilgrim Station, July 19, 2010) Certainly there is and was a written program. Perhaps as a result of not understanding PW's Petition, the Proposed Decision avoided answering the real question: Precisely why that program (again assuming for the sake of discussion that Entergy will follow it) is or is not adequate to provide reasonable assurance.

The Proposed Decision makes three broad-brush statements about NRC Regulations, Entergy's Nuclear Management Manual EN-DC- 346, Cable Reliability Program, Revision 3 and Regulatory Guide (RG) 1.218:

a. According to the Proposed Decision, NRC Regulations "require plant owners to ensure that electrical wiring (cables) is designed to function in environmental conditions during normal operation and during accidents." (Proposed Decision, 4) The Proposed Decision also says that Entergy must "assess the condition of their components" at PNPS;¹⁶ "monitor the performance" of those "components ... in a manner sufficient to give reasonable assurance;" and

¹⁶ The Proposed Decision nowhere contracts PW's factual assertion "that Pilgrim has a long history of cables being submerged or wetted." PW Petition, 2). Indeed, the Proposed Decision admits that "cables that are not designed to operate in a submerged condition are likely to experience early failures, which can potentially result in significant safety consequences." (Proposed Decision. 6).

"establish a suitable test program to ensure that all testing necessary ... is identified and performed." (Id., 5)

b. Referencing Entergy's Nuclear Management Manual EN-DC-346, "Cable Reliability Program," Rev. 3, the Proposed Decision states the programs "objective," and says that Entergy's program "includes several testing methods that *can be* used." (Id. 5, emphasis added) According to the Proposed Decision, the "NRC reviewed the Cable Reliability Program" including "several testing methods that can be used;" and never showed that they *shall be* used,

c. The Proposed Decision says that the monitoring techniques are "consistent with methods described in Regulatory Guide (RG) 1.218."

But the Proposed Decision is devoid of facts that might sufficiently support, much less does it provide facts from which anyone could reasonably conclude, that either Entergy's written program or its actual practice will do what the regulations require and RG recommends.

With respect to the first, nowhere does the Proposed Decision identify any specific facts showing how the cables were "designed," how they are "assess[ed]" and "monitor[ed]," or what testing is actually performed. So far as can be told, none of this is addressed in Entergy's written program. The only "fact" pointed to in the Proposed Decision, that Entergy may have installed an automatic dewatering device in one manhole (see Proposed Decision, 8), is plainly not enough to support the conclusion that Entergy has done, or will continue to do, what the regulations require.

Similarly, nothing in the Proposed Decision provides any facts that might show how any of the "objectives" of Entergy's supposed program might be achieved. It also never says what the "several testing methods" referred to in the Entergy Manual actually are, or which if any of

them actually will be used." It briefly refers to "monitoring techniques and inspection testing methods that Entergy uses" (Proposed Decision, 5) but tellingly never says what these techniques and inspection techniques are, when any might have been used, how each is appropriate for cable to be tested, when or how any actually might be used, or describe the protocol for specific corrective actions.

Questions 7, 8, 10, 11, 17 and 18 posed to Mr. Dean are directed to facts that the NRC knew or should have ascertained, and that the Proposed Decision should have considered before concluding that what NRC regulations require is and will be met, and that Entergy's written program somehow will in fact provide reasonable assurance.

Question 8, for example, asked which of the 12 methods described in Reg. Guide 1.218 has Entergy used in its monitoring, and what such methods will it use or does it have any plan to use in the future? Those writing the Proposed Decision apparently did not know the answer..

Questions 10 and 11 asked, to the best of the NRC's knowledge, whether Entergy's operations at PNPS meet the requirements of 10 CFR 50.49 and Appendix B Criterion XI, and which testing methods described in Entergy's Nuclear Management Manual EN-DC-346 have been used for condition monitoring and aging assessments for medium and low voltage cables. Again, the Proposed Decision takes no account of this NRC knowledge.

Questions 17 and 18 asked Mr. Dean to describe all actions that the NRC has undertaken since January 2007 to verify that the Pilgrim PNPS properly implements approved programs to ensure that the Licensees programs will adequately manage aging affects to give reasonable assurance that cables subject to moisture will be adequately managed during extended operation, and also to describe what actions the NRC has taken since January 2006, or will take during PNPS's "extended operation," to insure that all inaccessible cables at PNPS are, and throughout

the expended period of operation, will be capable of performing all of their functions. None of this is addressed in the Proposed Decision.

The facts that these questions sought to elicit clearly are, or should be known, by the NRC, and addressed in the Proposed Decision. Mr. Bellamy's short email provided essentially none of the facts sought. Neither it nor the Proposed Decision even attempts to explain what tests Entergy will or did conduct, or provide any test results. For example, the voltage test must apply voltage to the cable that is at or above the cable's rating to see if the cable can withstand the stress of normal operations. If a lower voltage is applied, the cable may pass the test when it would have failed the test with a higher voltage. Neither is there showing in the Proposed Decision of what Entergy's approved program actually accomplishes or requires, or what (other than reading paper) the NRC actually has done or will do to verify that PNPS properly implements what has been approved.

The known facts that a basic question posed to Mr. Dean sought to elicit should have been, but were not, considered by or answered in the Proposed Decision:

Q. 9. To the best of your and the NRC's knowledge, do Entergy's operations at PNPS in any way differ from the methods and techniques described in Regulatory Guide 1.218?

The Proposed Decision statement says that the monitoring techniques outlined in the Entergy Program are "consistent with methods described in Regulatory Guide (RG) 1.218," but it never says what "consistent" means, or shows how Entergy's program is in fact consistent or differs from RB 1.218, or that the Entergy program is sufficient. For example:

- 1) RG 1.218 says that "Research and experience has shown that no single, nonintrusive, condition monitoring method currently available, if used alone, is effective to predict the performance of electric cables under accident conditions." The Proposed

Decision gives no indication of what condition-monitoring method has been used at Pilgrim, or how, unlike the "currently available methods" to which the RG refers, what Entergy might use would be "effective to predict the performance of electric cables under accident conditions."

- 2) RG 1.218 describes 12 Monitoring Methods (see question 8 above) and describes and the advantages and disadvantages of each. The Proposed Decision provides no information to show that any technique used at Pilgrim compensate for or in any way overcomes, the disadvantages of any tests used.
- 3) The RG describes eleven elements needed to provide effective condition-monitoring (RG, 10). The Proposed Decision neglects to provide any factual information to assure that Entergy has adhered to any of them. This failure is particularly egregious since, as the RG specifically states, the condition-monitoring techniques should be based on plant-specific design, installation and operating conditions.
- 4) The RG also says (at 10) that "the techniques selected should be based on plant-specific design, installation, and operating conditions and operating experience related to the cables used in nuclear plant" and that "cable conditioning monitoring should be augmented" when, as the Proposed Decision later admits to be the case at Pilgrim, the facility's operational history evidences that, for a variety of reasons, submerged cables are a real problem. Nothing in the Proposed Decision shows that any of this has been done at Pilgrim.

Finally, we must briefly address the Proposed Decision's statement that the NRC reviewed Entergy's Cable Reliability Program and found no deficiencies. Once again, the decision provided no facts. As a matter of simple fact, the Proposed Decision's apparent

conclusion that there were "no deficiencies" is not "documented" by NRC Inspection Report 05000293/2012003 dated July 23, 2012. All that the report says is that, except for a "walk down of areas" (that so far as can be told did not include any cable-containing manholes), all the inspectors did was review some documents related to "*one sample* of flood protection measures affecting cables located in underground manholes," and inspection reports that related to only three of Entergy's at least 20 manholes.

We fail to understand on what factual basis the Proposed Decision could conclude the "no deficiencies" is "documented" by a Report saying that "No findings were identified." That Report includes no information as to what the sample documents reviewed said about these (or any other manholes) being flooded. No information is provided how the inspectors assessed the condition of the cables, splices and supports and no information provided about what the found or what actions followed.

There are a significant number of other NRC reports that "document" the Entergy's history of flooded manholes that contain non-qualified cable. Tellingly, those are not even mentioned in this section of the Proposed Decision.

D. WET/SUBMERGED ENVIRONMENTS (PROPOSED DECISION, SECTION B)

The Proposed Decision acknowledge[d] the validity of the issue that Petitioner raises that "cables that are not designed to operate in a submerged condition are likely to experience early failures, which can potentially result in significant safety consequences,"

Its apparent conclusion that this is not a problem because "many medium and low power cables, which are commonly used in nuclear power plants, are in fact, designed for wet and wetted environments" (Proposed Decision, 6) ignores the undisputed fact that many of Pilgrim's underground cables are not EQ-qualified.

The Proposed Decision also “acknowledge[d] that more recent industry experience ... shows an increasing trend of inaccessible power cable failures.” (Proposed Decision, 6) There is no support for its attempted exculpatory conclusion that “two to four bunkers/manholes should be inspected on an annual basis.

The Proposed Decision also said that the NRC it has “recently updated its inspection *guidance... to require* inspection” (Proposed Decision, 7, italics added) and has “requested licensees to provide failure history information for power cables ...and a description of inspecting, testing and monitoring programs.” (Id., 7) Here, the Proposed Decision ignores that “guidance” does not “require” anything.” The Proposed Decision also misstates what the Licensee had reported, and admits that its inspectors had observed at Pilgrim “partially submerged medium voltage cables” that “were not designed to be installed in a submerged environment.” (Id., 8)

Once again, this section of the Proposed Decision is based on highly questionable unsupported statements, misstated facts, and does not address the facts and issues that PW has raised in the Petition and Supplements.

1. Submergence

The Proposed Decision definition (at 6) - “A submerged condition in this case is referring to long-term cable submergence in water (i.e., greater than 3 consecutive days which recognizes that temporary flooding is possible due to heavy rains or snow melt”- is unsupported. It is also inconsistent with RG 1.218 (at 3) that defines submergence as “submersion (i.e., an operating environment in which a cable is completely submerged in water continuously or for extended periods of time.” It does not say “three consecutive days.”

This definition is also inconsistent with what the Proposed Decision calls a “wetted

environments," i.e., one in which "the soil could contain moisture" or a "cable that can be subject to high humidity or water spray like rain." (Id.).

There is a big difference between "moisture" (a wetted environment) and "submergence" (a wet environment) but both are important whether a 40 year old non-qualified cable can perform its intended functions for 20 more years. The Proposed Decision provides no basis for its view that only "submergence in water" for greater than 3 consecutive days" is important.

2. Operating Experience

The Proposed Decision says at 7 that, "the Licensee reported that it has had one cable failure within the scope of GL 2007-01, and stated that the cause of the failure was due to installation damage." The Licensee only said that, "failure appeared to be due to installation damage." Those responsible for the Proposed Decision appear never to have looked into the important difference between "appeared to be" and "was."

3. Inspections

The Proposed Decision acknowledged the validity of the issue raised by PW that "cables not designed to operate in a submerged condition are likely to experience early failure which can potentially result in significant safety consequences." (Proposed Decision, 6) Yet there are no facts that even potentially show that the Flood Protection Measure cited by the Proposed Decision, can possibly provide assurance.

According to the Proposed Decision, the "guidance" (not requirement) of those measures simply calls for rotating through Pilgrim's 20+ manholes at the rate of two to four bunkers/manholes a year then begin the cycle again. (Decision, 7)

The Proposed Decision's conclusion that this program provides reasonable assurance did not consider the following:

a. The Proposed Decision fails to identify that they even know how many bunkers/manholes there are at Pilgrim. Ron Bellamy subsequently told PW that "[a]pproximately 20 manholes are included in this program"; who knows how many are not included. In any event, a 10 to 20% sample appears to be very small, and nothing in the Proposed Decision shows that it is realistically or statistically large enough. Neither does anything in the Proposed Decision address a question posed to Mr. Dean: What bunkers/manholes at PNPS have NRC inspections inspected since 2007, and which have they not inspected? .

b. If only 2 manholes are inspected every year, it would mean that those manholes would only be inspected once over the next 20 year license, at best only once in 10 years.

The undisputed fact is that climate change has and will continue to result in increasing number of severe storms and flooding. RG 1.218 (at 3) says, "...the occurrence of cable system operating environments or locally adverse conditions that are unanticipated or more severe than the original plant design may constitute a design deficiency. A cable system must be designed to meet applicable regulations and to perform its intended function in the plant environment under DBEs."

As earlier pointed out, it is also undisputed that cables degrade more rapidly as they age, and that many of Pilgrim's are already beyond the life for which they were designed.

c. The Proposed Decision never addresses, and so far as can be told those responsible for it never considered, degradation. It never considers how many cables Entergy has actually tested for degradation. (See question 16 to Mr. Dean) More generally, the Proposed Decision shows no understanding of degradation or corrosion. For example, it does not consider relation of degradation and corrosion to the age of the component, site-specific soil characteristics, climate and predicted climate change effects; or how, in view of all of this,

reasonable assurance is provided by inspecting over 40 year-old cables only once, or twice, over the next twenty years provides reasonable assurance.

d. Also, the Proposed Decision nowhere mentions that the percentage of non-qualified cables between manholes is far greater than the percentage actually in them. So far as been told, nothing in the NRC "guidance" or Entergy's "program" considers this either.

e. Other significant issues not mentioned by the Proposed Decision include: whether manholes are at the low points nor if the conduits in the connecting duct banks are sloped for water to drain into the manholes; whether greater assurance was or will be obtained by walk-downs of the duct banks to verify that there is no evidence of settling or that the duct bank has shifted; whether there is evidence that the sump pumps are capable of keeping up with the flow of water.

Operating Experience, Pilgrim: The Proposed Decision admits that, based on operating experience at Pilgrim and for the industry as a whole (as reported by RG 1.218 at 3) inaccessible or underground power cables can no longer be considered as inherently reliable.

In its Section B, the Proposed Decision says that it has only identified one cable failure at Pilgrim. It said that, "Entergy had previously identified" unqualified submerged cables in "a manhole and vault containing startup transformer cables. (Proposed Decision, 8)

What the Proposed Decision ignores is that the very inspection report that it cites, NRC Integrated Inspection Report *05000293/2010003*, 1RO6 Flood Protection Measures, July 29, 2010, says that Pilgrim shows that NRC inspectors looked at three cable vaults, not just one, and observed partially and fully submerged medium voltage cables in all three; indeed Entergy admitted that two of the three were always found submerged. (Report, pp.7-8: "*cables in Manhole 2A were periodically found submerged or partially submerged, and that cables in*

Manholes 4 and 5 were always found submerged.")

This report, to say nothing of the "recent industry experience" that the NRC admits "shows an increasing trend of inaccessible power cable failures (Proposed Decision, 6) makes clear that flooding is a recurring, if not rampant, problem - at Pilgrim and throughout the industry.

The Report attempts to excuse this by saying that "the most recent NRC inspection of Pilgrim's flood protection measures ... identified no deficiencies or findings" and that IN 2010-26 reported, that the submergence of the cables found in one inspection was of very low safety significance. (Id., 8)

This excuse apparently intends to create the impression that no submerged cables will have any real safety significance; but this plainly is contradicted by facts that the NRC knows but the Proposed Decision failed to consider.

V. CONCLUSION

Several months ago, Judge Rosenthal of the ASLB accurately said that, with one possible exception, the NRC had not granted a section 2.206 petitioner the substantive relief it sought for at least 37 years;. The NRC Staff's near 100% rejection rate is exacerbated by the fact that its rules try to make any review of Director's Proposed Decisions essentially impossible. Judge Rosenthal concluded that, "where truly substantive relief is being sought (i.e., some affirmative administrative action taken with respect to the licensee or license), there should be no room for a belief on the requester's part that the pursuit of such a course is either being encouraged by Commission officialdom or has a fair chance of success."¹⁷

¹⁷ Memorandum And Order (Denying Petitions For Hearing), LBP-12-14, July 10, 2012, Additional Comments of Judge Rosenthal (See NRC's EHD Docket EA-12-05-/12-051)

This Proposed Decision unfortunately continues to follow that path. By ignoring issues that PW raised, and undisputed facts that the NRC knows, the Proposed Decision would deny Pilgrim Watch the relief to which, properly analyzed and considered, it is clearly entitled.

Pilgrim Watch respectfully asks that the Staff provide the Director a Proposed Decision that considers all of the facts and issues, meets the NRC's obligations, and grants Pilgrim Watch that relief. The Director should approve the same.

Respectfully Submitted, April 19, 2013

(Electronically signed)

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APPENDIX A

1. How many bunkers/manholes at Pilgrim contain non-EQ electric cables?
2. We understand that flood Protection Measures require inspection of underground bunkers/manholes subject to flooding that contain cables whose failure could result in a significant risk.
 - a. How many bunkers/manholes at Pilgrim require inspection pursuant to this guidance?
 - b. Provide documentation showing for each such bunker/manhole, the date, compliance and the results of each inspection.
 - c. Please list each monitoring technique and inspection method that Entergy has used to monitor and/or inspect to establish cable reliability, and identify any such technique or method that has not been used since January 2006.
3. Cable circuits can pass through several different operating environments over the length of their routing.
 - a. Are only manholes tested for submergence? If not, what areas are tested other than manholes, e.g., areas between manholes?
 - b. If only manholes are tested, please explain in detail and with specifics how this provides assurance that the areas between manholes are not and have not been submerged?
4. We understand that Entergy revised its cable-monitoring program to include condition-based (event-driven) inspections, e.g., as a result of heavy rain or flooding), including the verification of the dewatering system function. Please confirm that this is correct and when the revised program went into effect. Also please provide documentation including the date of each event-driven inspection, a description of the event that resulted in each inspection, and for each event document and describe the inspection performed and any verification of dewatering system functions.
5. Please describe the dewatering system used at Pilgrim. What are its components and how does it work?
 - a. Do they now have water sensors in the manholes that trigger sump pumps and if they do not now have such a system, do they plan to in the future, and if so by what date will it be installed?

6. We understand that Entergy periodically performs surveillance testing of equipment to test the integrity of electric cables and identify degradation.
 - a) Please indicate how many surveillance tests were performed, and the date(s) on which each was performed;
 - b) Indicate which tests were on cable sections that were installed at Pilgrim (provide date that the section tested was installed at Pilgrim and its location); and which tests were on cable sections of the same type as those installed at Pilgrim.
7. In determining and/or reporting whether a cable is or has been submerged, what definition(s) does Entergy use for the term "submerged;" and identify all relevant NRC Regulations or other documents, of what definition(s) of "submerged" are or have been used by the NRC?
8. What methods described in Reg. Guide 1.218 (including each of the following) has Entergy used in its monitoring, and what such methods will it use or does it have any plan to use in the future? Please provide documentation, including dates, showing when each of the following tests were used with respect to any manhole, the results of each test, when each test was performed, and (for each manhole) when each such test is planned to be performed in the future.
 - a. Direct Current High-Potential Test
 - b. Step Voltage Test
 - c. Very Low Frequency Test
 - d. Illuminated Borescope Technique
 - e. Visual Inspection
 - f. Compressive Modulus Technique
 - g. Dielectric Loss Dissipation Factor Test
 - h. Insulation Resistance Test
 - i. Partial Discharge Test
 - j. Time Domain Refractory Test
 - k. Frequency Domain Refractory Test
 - l. Infrared Imaging Thermography Technique
9. To the best of your and the NRC's knowledge, do Entergy's operations at PNPS in any way differ from the methods and techniques described in Regulatory Guide 1.218? If so,

- (a) please identify each and any way in which there is, or has been since January 2006, any difference between Entergy's operations and what is described in Regulatory Guide 1.218 and
- (b) State the basis, if any, on which the NRC has determined that the methods and techniques used by Entergy are acceptable.
10. To the best of your and the NRC's knowledge, do Entergy's operations at PNPS meet the requirements of 10 CFR 50.49 and Appendix B Criterion XI? If not:
- (a) Please identify each and any way in which there is, or has been since January 2006, any difference between Entergy's operations and what is described in 10 CFR 50.49 and Appendix B Criterion XI and
- (b) State the basis, if any, on which the NRC has determined that the methods and techniques used by Entergy are acceptable.
11. To the best of your and the NRC's knowledge (a) which testing methods described in Entergy's Nuclear Management Manual EN-DC-346 have been used for condition monitoring and aging assessments for medium and low voltage cables; (b) when were they used; and (c) with respect to which cables? Please provide documentation for each of these tests, including results, reports and/or conclusions or recommendations.
12. Other than a letter from Entergy dated May 3, 2007 or December 9, 2007, what is the basis in NRC Integrated Inspection Reports 05000293/20112009 for the statement that failure of Cable A404CD, 4106 "appeared to be due to installation damage?"
13. With reference to Inspection Report 05000293/20111003, to your and the NRC's knowledge, what corrective actions has Entergy actually taken?
14. We have been informed that NRC inspectors will rotate through bunkers/manholes until all are inspected. What bunkers/manholes at PNPS have NRC inspectors inspected since 2007, and what bunkers/manholes at PNPS have not been inspected by NRC inspectors since 2007?
15. Specifically, what has the NRC done to verify statements in Entergy's letters of May 3, 2007 and December 9, 2007 that "the cause of the failure [of a cable] was due to installation damage, or in Entergy's letters of January 7, 2011 and May 16, 2011 that there have been no subsequent failures?"

16. To the NRC's knowledge, since January 2007, how has Entergy in fact tested cables for degradation, and what were the results of each such test? Please provide any documentation relating to any such test.
17. We have been told that the NRC follows existing regulatory processes, policies and programs to verify that the Pilgrim PNPS properly implements approved programs. To the extent not specifically identified in response to one of the previous questions, please specifically describe all actions that the NRC has undertaken since January 2007 to verify that the Pilgrim PNPS properly implements approved programs to ensure that the Licensees programs will adequately manage aging affects to give reasonable assurance that cables subject to moisture will be adequately managed during extended operation. Please also describe in detail exactly what the NRC means by "adequately manage."
18. To the extent not provided in response to one of the preceding questions, please specifically describe what actions the NRC has taken since January 2006, or will take during PNPS's "extended operation," to insure that all inaccessible cables at PNPS are, and throughout the expended period of operation, will be capable of performing all of their functions.

Remsburg, Kristy

From: Mary Lampert [mary.lampert@comcast.net]
Sent: Friday, April 19, 2013 2:57 PM
To: Borchardt, Bill
Cc: NRCExecSec Resource; Guzman, Richard
Subject: PILGRIM WATCH REPLY TO PROPOSED DIRECTOR'S PROPOSED DECISION UNDER 10 CFR 2.206 [7590-01-P] - DOCKET No. 50-293
Attachments: 04.19.13 PW REPLY PROPOSED DIR. DECISION 10 CFR 2.206-NON EQ CABLES.pdf

Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, DC 2-555-0001
Via Email: bill.borchardt@nrc.gov
NRCExecSec@nrc.gov

Please find attached PILGRIM WATCH REPLY TO PROPOSED DIRECTOR'S PROPOSED DECISION UNDER 10 CFR 2.206 [7590-01-P] - DOCKET No. 50-293 (April 19, 2013). If you have difficulty in opening the attachment, please call Mary Lampert at 781-934-0389. A courtesy of notice of receipt is requested.

Thank you and enjoy the day.

Mary