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NUCLEAR REGULATORY COMMISSION

OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the matter of

Docket # 50-293

Entergy Corporation

Pilgrim Nuclear Power Station

License Renewal Application

June 2, 2008

**Pilgrim Watch Reply to Entergy's Answer Opposing Pilgrim Watch's Motion to Strike and Request to Reopen the Hearing and NRC Staff's and NRC Staff Response to (1) Pilgrim Watch Motion To Strike Testimony and (2) Motion to Include as Part of the Record Exhibits Attached to Pilgrim Watch Motion to Strike Testimony**

### INTRODUCTION

Pursuant to the Board's Order (Setting Relevant Deadlines), ASLBP No. 06-848-02-LR, May 28, 2008, Pilgrim Watch replies to Entergy's and NRC Staff's May 27, 2008 responses to Pilgrim Watch's Motions of May 15 and 27, 2008.<sup>1</sup>

This Board has made clear that, unlike a judge in a normal court proceeding, it is not a neutral Board that sits back and only listens to what the parties have to say. This Board's discussion at the Hearing made it quite clear that the Board bears the responsibility doing what is necessary – taking control of the procedure - to insure that it has obtained the information it needs to reach its decision. The Transcript shows, and subsequent Orders, that the Record remained open at the time of the filings under discussion.

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<sup>1</sup> Entergy's Answer Opposing Pilgrim watch's Motion to Strike and Request to Reopen the Hearing, May 27, 2008 (hereinafter "Answer"); NRC Staff Response in Opposing to (1) Pilgrim watch Motion to Strike Testimony and (2) Motion to Include as part of the Record Exhibits Attached to Pilgrim Watch Motion to Strike Testimony. May 27, 2008 (hereinafter "Responses")

Temp = SECY-041

DS03

Pilgrim Watch understands that the Board's responsibility is to determine, from all of the information available to it, whether and under what conditions Pilgrim's license should be extended. When, as in the present situation, this Board has learned important facts, it cannot meet its responsibilities if it ignores those facts – whether or not those facts were presented to it in the course of the formal hearing.

Entergy stated in their Answer (at 3) that a motion to strike is limited in scope and function and is used as “an appropriate mechanism for seeking the removal of information from a pleading or other submission that is ‘irrelevant’” or “contain[s] technical arguments based on questionable competence.”

Pilgrim Watch's motion did not judge the expert's competence; rather we filed the motion to strike because competent individuals chose to make irrelevant, incorrect and misleading statements at the hearing that left uncorrected would impact the outcome of this adjudication.

Pilgrim Watch's reply frames its' discussion around the two areas under dispute – procedural and substantive.

#### **PROCEDURAL – TIMELINESS OF FILINGS & 10 C.F.R. § 2.326**

It seemed clear to Pilgrim Watch that the record remained open by virtue of the First Federal Circuit; and this appeared confirmed by the Board's statements at the Hearing, subsequent ASLB orders and the NRC Commission. We proceeded on this understanding in good faith.

**Transcript:** The relevant portions of the Transcript that discuss staying of the hearings and keeping the record open are found on pages 868-872.

Judge Young [Transcript 868-9] made it crystal clear,

The 1<sup>st</sup> Circuit Court of Appeals said they're staying the closing of the hearings... I'm not willing to close the record ... so let's wait and see what happens next. But we're not going

to close the record now and I don't think it's appropriate to schedule proposed findings of fact and conclusions of law until the record is closed (at 870).

However Judge Abramson (at 870) sought clarity and stated an alternative,

It's clear to me that in the absence of further testimony submitted by the Massachusetts Attorney General on this particular contention. No more testimony will be taken except if it's in response to the motion we now have from Pilgrim Watch which we assume you will reply to when you see in due course. So while the record isn't formally closed, there should be no further testimony from any party on this particular contention...

Chief Judge Young qualified Judge Abramson's statement (at 871), "It's *unlikely* I think" [emphasis added]. "Unlikely" to Pilgrim Watch does not say that there will or cannot be any further testimony from any party on this particular contention – especially when heard and read in the context of the entire discussion.

NRC Staff Counsel, Ms. Uttal (at 872) brought up the issue of time limits in regard to Pilgrim Watch's Cuff Motion and a 10-day clock was set, starting April 11. To the best of our understanding, that was the only clock set at the Hearing.

Pilgrim Watch walked out of the Hearing on April 10 with the full understanding that the Record remained open; and that new and significant facts that would correct misstatements would be welcome by the Board – information that would better enable the Board to have a factual and accurate understanding of the issues under consideration.

**Subsequent Board Orders:** Subsequent orders confirmed to us that the Record was not closed by virtue of the First federal Circuit.

The ASLB Order (Setting Deadlines for Provisional Findings and Conclusions on Contention 1 and For Pleadings Related to Pilgrim Watch's Recent Motion Regarding CUFs) (ASLBP No. 06-848-02-LR), May 12, 2008 said (at 2) that,

...setting the deadlines in question should not be construed as closing the hearing in the matter; among other things, if the need for further findings later arises based on the current stay or related activities, these will be permitted as appropriate and necessary (Order at 3).

The ASLB Order (Setting Relevant Deadlines), ASLBP No. 06-848-02-LR, May 28, 2008 again did not say that the Record was closed. Therefore, our conclusion that filings submitted were allowable appears to be fully supported and reasoned.

**10 C.F.R. § 2.326:** In the alternative, if our understanding of the status of the record was incorrect, our Motions to Strike and Motion to Include as Part of the Record Attached Exhibits seem in hindsight to meet the spirit and criteria of 10 C.F.R. § 2.326.<sup>2</sup>

10 C.F.R. § 2.326 allows factual material provided to be considered, even if “untimely presented,” if the presiding officer regards the material of significant importance; that it addresses a significant safety issue; and that a materially different result would be or would have been likely had the newly proffered evidence been considered initial. We believe that the material presented meets these qualifications and the factual information assists the Board in making a sound decision.

Correcting blatant misinformation on relevant matters presented during a hearing could never be construed as being of minor or insignificant importance. The Board, in order to perform its obligation to protect the public’s safety in this matter, requires good and accurate information.

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<sup>2</sup> Sections (a) A motion to reopen a closed record to consider additional evidence will not be granted unless the following criteria are satisfied: (1) the motion must be timely. However, an exceptionally grave issue may be considered in the discretion of the presiding officer even if untimely presented;(2) The motion must address a significant safety or environmental issue; and(3) The motion must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially.

Mr. Fitzgerald's Statement: It is true that his statement is not in the format for an affidavit; although it could be provided, if the Board so desires. His statement demonstrates by his CV that he is an exceedingly competent individual with knowledge of the facts alleged and an expert in the area that the issues are raised. His qualifications are not disputed by NRC's expert, Dr. James Davis. Mr. Fitzgerald provided a signed document and provided his full contact information. His statement prompted Dr. Davis to correct his testimony; and now the Board has those corrections and a true understanding of the issue.

## SUBSTANTIVE ISSUES

### *Pilgrim Watch Demonstrated That a Materially Different Result would be Likely*

Entergy incorrectly claims in their Answer (at 7) that Pilgrim Watch failed to demonstrate that a materially different result would be likely. Nothing could be further from the truth.

The Order: The ASLB on October 17, 2007, December 19, 2007 and January 11, 2008 considerably narrowed the original order saying that: the only issue remaining before this Licensing Board regarding Contention 1 is "...whether Pilgrim's existing AMPs have elements that provide appropriate assurance as required under relevant NRC regulations that the buried pipes and tanks will not develop leaks so great as to cause those pipes and tanks to be unable to perform their intended safety functions."<sup>3</sup>

There is a dispute to resolve. Entergy and NRC Staff find the AMPs sufficient; Pilgrim Watch concludes the AMPs are insufficient, need to be supplemented and that neither Entergy nor NRC Staff provided the requisite proof (facts) to support their position. Therefore, in order for the Board to make a good decision, it must have factual information about cathodic protection, the CIPP liner, coatings and materials, instead of relying on selective, incorrect and misleading testimony.

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<sup>3</sup> Memorandum and Order, LBP-07-12, 66 N.R.C. (October 17, 2007) (Summary Disposition Order); Order Revising Schedule for Evidentiary hearing and Responding to Pilgrim Watch's December 14 and 15 Motions, LBP-06-848-02 N.R.C. (December 19, 2007); Order Denying Pilgrim watch's Motion for Reconsideration, LBP-06-848-02 NRC (January 11, 2008)

## CATHODIC PROTECTION

### *Pilgrim Watch Demonstrated That a Materially Different Result would be Likely*

Pilgrim Watch contends that the AMP is insufficient to prevent the buried pipes and tanks to develop leaks so great as to cause those pipes and tanks to be unable to perform their intended safety functions. One supplement needed to be added to the AMP is for the pipes to be retrofitted with cathodic protection (CP) so that they will not corrode further.

At the hearing, NRC's expert incorrectly, and authoritatively, stated that to retrofit cathodic protection would be *dangerous*; and further if the rectifier (a part of a cathodic protection system) went down, the licensee would go into a limited operating condition and *have* to shut down until the rectifier was repaired.

It was likely the Board would believe Dr. Davis' incorrect and misleading assessments in making its final decision by virtue of the fact that Dr. Davis is a Senior Materials Engineer in the Office of Nuclear Reactor Regulation ("NRR") and author of the NRC Guidance document, GALL's XI M28~~9~~ NRC guidance that specifically calls for cathodic protection of buried components and explains its' importance. Therefore a materially different ruling by the Board would be likely had the newly provided evidence not been offered and considered.

Dr. Davis' statements did not ring true. Pilgrim Watch researched who was the authority in the field; and because we are an unfunded group, asked him to volunteer his expertise. Mr. Fitzgerald provided us with his expertise; and it is unquestioned that he is an expert with qualifications and experience certainly equal to or exceeding Dr. Davis' experience.

In addition we provided comments by leading Cathodic Protection/Stray Current corporate providers who confirmed Mr. Fitzgerald's key statements regarding the safety of retrofitting CP.

As a consequence of Pilgrim Watch filing a Motion to Strike, Dr. Davis retracted his inaccurate and misleading statements - *Affidavit of Dr. James A. Davis in Response to Pilgrim Watch Motion to Strike Testimony*, May 23, 2008 (at page 5 and 6). This addition to the Record serves

the Board so that it can make a decision based on fact, not misinformation; and no doubt serves Dr. Davis in maintaining his professional standing.

**Retrofitting Cathodic Protection is Not dangerous:** In his Affidavit, Dr. Davis conceded that he misspoke at the hearing and that retrofitting cathodic protection is, in fact, not dangerous, in and of itself. Obviously, if it is not installed properly, like anything else, you can run into problems.

Dr. Davis' Affidavit (9)

Mr. Fitzgerald's ... refers to my testimony at Tr page 771, lines 5-15 and page 772, line 1, regarding problems with backfitting cathodic protection. Mr. Fitzgerald states: "These statements are blatantly untrue. There is nothing at all dangerous about installing cathodic protection in complex facilities like power stations. It simply requires proper design to ensure effective protection. It is important to realize that, with the possible exception of buried or submerged piping or tanks unique to nuclear power, the underground structures at a nuclear plant are no different from those at fossil fuel plants" [Fitzgerald Letter at 2].

Dr. Davis then says,

Perhaps the term I used - "dangerous" - is a bit strong. A better choice of words would be "caution should be exercised when backfitting a cathodic protection system to avoid stray current corrosion."

At 10, Dr. Davis corrects his statements concerning the stray current issue admitting that stray currents are a design issue not a design constraint. He says,

Mr. Fitzgerald's final comment refers to my testimony at Tr page 771, lines 16-25, where I stated that "[y]ou have to know where every single pipe is on your facility and then you have to bond these together and that's extremely difficult to do -" Mr. Fitzgerald states: This is basically true, although it is presented in a manner that not only gives the impression that achieving electrical continuity among the plant piping is extremely difficult, but that cathodic protection is actually dangerous, as erroneously stated on Page 771, line 6. In lines 23-25 & Page 772, line 1, Dr. Davis is partially correct in saying that bonding, that is, electrical continuity, is necessary. Line 24 & 25 are misleading,

however, because the protective current still flows through the soil to the underground structures. What really happens here is that if the current encounters a structure that is not electrically continuous with the protection system, the current can flow along that structure and discharge back into the soil. At the point of discharge, corrosion will indeed occur; this is called stray current corrosion. The strong impression that one gets from lines 16-25 is that achieving electrical continuity of underground structures in a complex facility is extremely difficult. It is not....

Last Dr. Davis says,

I agree with Mr. Fitzgerald that as long as a cathodic protection system is properly designed, it will protect the piping. My point was that retrofitting cathodic protection can cause stray current corrosion and bonding can be used to avoid stray current corrosion. Bonding is shown in Attachment 2, *Corrosion Engineering* at 210, Figure 6-7 as a means of avoiding stray current corrosion. Improper design of a retrofitted cathodic protection system that does not consider nearby buried piping can result in stray current corrosion.

**Rectifier Malfunction Does Not Automatically Trigger Shutdown:** Dr. Davis at the hearing incorrectly stated that the reason he and NRC provided an alternative to M28 with M32 was because NEI stated that if rectifiers, a part of the CP system, went down the licensee would have to shut down until it was repaired. Therefore this added safety measure would be a burden to the licensee by costing them money. However, we learned that is not correct; and even if it were, what a poor excuse for NRC to place industry convenience and profits over public safety.

Mr. Fitzgerald indicated that if a rectifier went down, it would likely take at most a couple of weeks (unlikely even a month) to get a replacement part, if one was not at the site; and in that short period of time, corrosion damage was not a concern. Further, we are talking about safeguarding public safety and incidentally saving Entergy money in the long run by making pipe replacement less likely in the future.

M28 says very explicitly (at No.10) Operating experience:

Corrosion pits from the outside diameter have been discovered in buried piping with far less than 60 years of operation. Buried pipe that is coated and cathodically protected is unaffected after 60 years of service. Accordingly, operating experience from application of the NACE standards on non-nuclear systems demonstrates the effectiveness of this program. [Emphasis added].

Dr. Davis corrects himself and sets the record straight [Affidavit at 5, item 8],

*If a licensee does not purchase the rectifiers as safety related, and if they use the cathodic protection as part of an aging management program, then the rectifiers may have to be made safety related by either ordering new rectifiers or commercially dedicating the existing ones. If the rectifiers fail, a plant would enter a limited condition of operation and may have to shut down if the rectifier was not repaired or replaced within a certain time (i.e., the time specified in the technical specifications).*

“If,” “may” and “a certain amount of time” does not say “shall” or that it will most certainly result in shut down.

Entergy voiced the same misleading concept in their Answer, at 20.

The NRC’s regulations expressly require that when a LCO “is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met.” 10 C.F.R. § 50.36(c)(2) (emphasis added).

They incorrectly and misleadingly underlined “the licensee shall shut down” as opposed to underlying “follow any remedial action permitted.”

Entergy’s then goes way overboard and says (at 20),

Thus, the failure of a safety-related rectifier, should cathodic protection be required, could result in an LCO and plant shutdown as Dr. Davis testified. Thus, unlike other

applications of cathodic protection where the outage of a rectifier for a short time is of no operational concern, even the temporary outage of a safety-related rectifier at a nuclear power plant could place a large burden on plant operations for little material benefit.

It is abundantly clear from Mr. Fitzgerald's statement, Dr. Davis' Affidavit correcting previous misinformation, and Gall XIM28 that the failure of a rectifier would not in all likelihood automatically require a shut down and that retrofitting CP would provide material benefit. Preventing further corrosion to buried components so that they can both perform their intended safety functions and require replacement from 2012-2032 is indeed a benefit.

Entergy refers to GALL XIM32 and argues that CP is "just one acceptable option for the aging management of buried pipes." However, they fail to acknowledge that retrofitting CP is the option that will work (prevent corrosion) - unlike the option they propose.

NRC sings a similar tune. They claim (at B) that information concerning cathodic protection is not relevant or material to the issue to be decided.

The issue to be decided in this case is whether the Aging Management Program ("AMP") for buried piping and tanks that may contain radioactive water is adequate. Since cathodic protection is not being credited in the AMP for the piping, information regarding cathodic protection is not relevant to the Board's decision whether the AMP is adequate as written. Nor is cathodic protection required by the Commission's regulations. Therefore, evidence about cathodic protection is not material or relevant to the Board's decision, and the motion to strike Dr. Davis' testimony should be denied.

Pilgrim Watch finds this argument absurd. The point of the contention is to demonstrate why the AMP is not sufficient and part of doing just that required explaining what the program lacks – CP is a key missing piece.

Pilgrim Watch holds that absent putting forth this new factual information to refute incorrect and misleading statements by Dr. Davis and Entergy a materially different ruling by the Board on cathodic protection would be likely.

Further it does not strike us as reasonable to suggest that Pilgrim Watch should have anticipated that GALL XIM28 would be falsely characterized as dangerous at the hearing and thereby should have prepared accordingly. NRC's own document, GALL XI M28, fully supported and provided the rationale for our argument – a “slam dunk.” M28 was “on the books” April 10<sup>th</sup> and remains so today. It has not been retracted or qualified. The only thing we failed to anticipate were experts stating incorrect and misleading testimony.

### **CIPP LINER**

#### ***Pilgrim Watch Demonstrated That a Materially Different Result would be Likely***

The Motion to Strike and Entergy's Answer brought forward information about the CIPP that could well affect the Board's final decision. This is principally because prior to seeing the Miller Pipeline Report and Entergy's Answer's Exhibits, M-1031, the Board had little to no site specific information.

The Board now knows that:

- (1) The CIPP installation on Loop “B” was problematic. During installation, the CIPP liner severed circumferentially and separated in three locations during the cool-down. Each of the severed locations is at an elbow – vulnerable locations to failure. To avoid Loop “B's” installation problems, in Loop “A” they intentional made a cut at the first elbow to relieve stresses in cool-down.
- (2) 2003 reports show that testing was performed on specimens taken from both Loop “A and Loop B”.
  - Six samples, three taken from each pipe end, were taken from each loop.
  - The testing assumed both a partially and fully deteriorated pipe steel pipe condition and also a pipe with a hole.
  - The Exhibit says that, “The partially deteriorated pipe steel pipe condition is realistic based on PNPS plant experience, inspection results, and observation of the intact condition of the pipe and external pipe wrap on previously excavated spools.”

- Testing was also performed on the epoxy compound used in the repairs.
- No subsequent testing performed or planned of the liner is mentioned.
- No explanation was given how six samples simply taken from the ends are predictive.

At the hearing none of this information was brought forward. Mr. Gundersen characterized Entergy's discussion at the Hearing as an "infomercial." Stephen Woods, one of Entergy's experts at the Hearing, is listed on Exhibit M-1031 as "reviewer/design verifier" on the CIPP project. And Pilgrim Watch assumes our share of the responsibility. Entergy's Answer (at 4) states that they "identified and produced over 10,000 pages of documents and that they provided the project documents for the design and analysis of the CIPP liner that fully describes the design, installation, repairs and testing of the CIPP liner for both discharge loops. Pilgrim Watch apologizes to both the Board and our experts for not finding that particular "needle in the haystack." Although no excuse, a plethora of documents was provided on each disc identified only with Bates numbers with no other identification as to their contents.

**Errors in field application of the CIP liner:** There was no inkling of this from testimony at the hearing.

Entergy's Answer, Attachment A, M-1031 (at 10) says,

Problems identified [in Loop B] were primarily with the project implementation process at PNPS, the level of knowledge of PNPS and vendor personnel directly and indirectly involved in the work and the handling of the aborted CIP liner and materials.

And at 6, referring to Loop B,

problems occurred – beginning with the epoxy – problems were attributed to unusually high ambient temperature conditions during the epoxy batching and wet out process; liner severed circumferentially and separated in three locations during the cool-down. Each of the severed locations is at an elbow at the end of a long straight run of pipe that is constrained between the elbows.

The Board and parties are better off with this information than without it. We now have established that the loops are not carbon copies so that there is reason to doubt that they will perform the same over the relicensed period; the severed locations, although repaired, were at an elbow which is a more vulnerable area to degradation and breakage than along a straight pipe

section/spool. Also if this information is of no consequence to the outcome, why did Entergy not discuss it at the Hearing and why is Entergy objecting in its Answer?

**Testing, assumptions/sampling:** Entergy's attachment, M-1031, May 23, 2003 clarifies this issue; moreover it provides new and potentially very important information (Attachment A, Calculation Sheet, D. Input data and Assumptions, pages 17-18)

Assumptions: Attachment A explains that the assumptions made for any calculations concerning the SSW discharge pipe assumed that the original steel pipe is either in a "partially deteriorated condition" (No. 9,10); or "fully deteriorated condition" (No. 11,13) or "where the existing pipe is in a partially deteriorated condition, provides support but has a hole" (No. 12).

Number 14 explains that,

The partially deteriorated pipe steel pipe condition is realistic based on PNPS plant experience, inspection results, and observation of the intact condition of the pipe and external pipe wrap on previously excavated spools ...

Exhibit M-1031 explains the methodology, at 16, saying that, "This is not meant to imply that the CIP liner is designed in accordance with the totality of the ASME Code Section III criteria but rather uses the methodology to evaluate primary and secondary stresses due to all imposed loads as presented in this calculation."

Sampling: Further (at pages 7 and 12) sampling included a total of six specimens from each loop, three from each end section. Pilgrim Watch questions why those six samples taken simply from the ends are representative. We also question how samples taken when the CIPP was installed are representative of the condition today or predictive of the condition of the liner over the relicensed period, 2012-2032. Testing was also done on the epoxy compound used for the repairs (at 14).

Results: Tests were performed to evaluate flexural modulus, flexural strength and tensile strengths. Loop B's tensile strength was below rated short term value, at 8. Loop A's, inlet sample, was below the rated values, too [at 14]. The analysis explains that based upon their assumptions, they determined the results acceptable.

**PW's Motion to Strike questioned whether the entire SSW Discharge Piping was lined with the CIPP – Questions remain concerning the Vault:** Pilgrim Watch stated in the Motion to Strike, that based on the Miller Pipeline Report's diagrams, that it looked as though the liner was

not applied in an area near and inside the auxiliary building - approximately 10 feet outside the building and an indeterminate footage inside the building. The paper also showed a photograph of a workman descending a ladder, subsurface, to work on the installation.

Entergy clarified (Answer at 10) that the “SSW piping inside of the vault adjacent to the auxiliary building is not buried;” therefore it is outside of scope. Are we now certain that the vault has not been backfilled or water allowed to accumulate in the vault so that the pipe is “buried,” in whole or part, with water?

**Warranty:** Neither the Miller Pipeline Report nor Entergy’s Answer produced written warranties from the various vendors to provide factual evidence to back up their assertion that the CIPP has an approximate 35 year life.

**Steel pipe, not liner, structural component of the SSW discharge piping system, clearly established:** Entergy’s Answer clarified Mr. Cox’s testimony (at 15),

Entergy clearly stated at the hearing that the CIPP is not relied upon to maintain structural integrity under seismic loads. Tr. at 618 (“it’s the pipe that’s relied on to meet the seismic stresses”) (Counsel for Entergy arguing objections to introduction of proposed Pilgrim Watch exhibit); Tr. at 621 (“the cured in place piping inside it is not relied on to meet the seismic stresses”) (Counsel for Entergy arguing objections to introduction of proposed Pilgrim Watch Exhibit).

This point is repeated in Entergy’s Exhibit M-1031 at 17 -D2.

The purpose of the CIPP installation is to provide a new protective lining...to protect the existing steel pipe that maintains the structural integrity of the discharge pipe that maintains the structural integrity of the discharge pipe for soil, overburden, seismic and live loads.”

PW points out that if the CIPP remains and does not leak or tear, it protects the metal from further internal corrosion only - but not from external corrosion.

## MATERIALS, COATINGS, LINERS

### *Pilgrim Watch Demonstrated That a Materially Different Result would be Likely*

The carbon steel metal pipe is relied on to provide the structural integrity of the system in a design basis event, such as an earthquake. If portions of the piping collapse in a DBT thereby blocking the flow path of the discharge piping, the piping could not remove heat from heat exchanger.

Pilgrim Watch has presented factual material showing that carbon steel, like all metal, corrodes; corrosion occurs both from exposure of the metal from the inside and/or outside to existing corrosive elements in Pilgrim's site specific environment. The metal pipe is lined and coated.

Therefore it is critical for the Board to have accurate information in order to assess if we can count on the liner and coating to remain intact throughout to prevent the metal pipe from corroding from 2012-2032 and risk failure. Neither Entergy nor NRC provided sufficient and always accurate information to enable the Board to do so. Therefore without these additions we risk the Board reaching a materially different result.

### **Materials**

Dr. Davis corrects the incorrect and misleading statements made during the hearing; however he backtracks in his Affidavit of May 27, 2008 (at 4) and misleads the Board and says, "...to ensure that buried structures such as piping and tanks can perform their intended safety function...Cathodic protection is only one possible method. A third method is to construct the components out of material that is not subject to aging in a soil environment."

What he fails to say is that although there may be a "third method," that third method cannot be counted upon as being effective; and certainly neither Entergy nor NRC Staff have or can prove that. The SSW Service discharge piping is made of carbon steel, not some miracle material.

Carbon steel has poor corrosion resistance. [Brookhaven at 26]

## Coating and Rubber Liner

**Coatings:** Pilgrim Watch has repeatedly demonstrated that coatings eventually deteriorate especially in moist soils such as Pilgrim's; coatings may be improperly applied to the pipe; and/or damaged during installation or accidentally from work performed in the area for other purposes. The SER attests to these facts at Pilgrim; and historical experience at other reactor sites demonstrates the same.

In PW's Motion to Strike, we showed where Entergy incorrectly stated at the hearing that the coating and liners will prevent corrosion.

For example, Transcript at 591,

That salt water service system is protected externally by coatings and wraps and it's protected internally by a cured in place epoxy liner (and) Despite those protective features which will prevent corrosion from occurring, we also have committed to the opportunistic and periodic inspections to insure that those coatings remain intact and remain effective in preventing degradation from occurring.

We know from Entergy's own disclosures that they are fully aware that this is not so. Pilgrim Watch submitted an Exhibit at the Hearing that stated,

PILLR00000658, Entergy: Aging Management Review of the SSW (Draft 11/12/01)

(3.1) "The piping that is underground is protected by a coating, but since the *coating does not have a specified life*, the aging effects will be evaluated for carbon steel." [Emphasis added].

The Draft was replaced by Entergy by the final version of the document and entered as Exhibit 70 [Transcript, page 745, line 14-16]. The Text was the same in both documents. Pilgrim Watch stated at the hearing that, "... to have the record show that Entergy had provided...three other documents that say the same thing" [Transcript page 753, line 15-16].

Entergy's Answer objects to PW's statement by making a rather senseless circular argument.

Entergy says (at page 18, d) that,

The document (Exhibit 70) reads, however, since “[f]or identifying aging effects the liner is not credited with a protective function, aging effects are identified for carbon steel in contact with salt water.” Motion at 2 (emphasis added). The document does not state that the liner is not properly credited as part of the aging management program consistent with the GALL Report.

And,

As explained by Entergy’s witness Mr. Cox with respect to similar language in the aging management review report for the SSW system (discussed below), if Entergy had credited a qualified protective life for the rubber liner, CIPP or coating (whatever the protective covering), there would be no aging effects on the underlying metal and no need for an aging management program.

**SSW Discharge Rubber Liner:** Entergy repeats this same argument – applying again meaningless and circular logic (at 17),

The document reads, however, since “[f]or identifying aging effects the liner is not credited with a protective function, aging effects are identified for carbon steel in contact with salt water.” Motion at 2 (emphasis added). The document does not state that the liner is not properly credited as part of the aging management program consistent with the GALL Report.

As explained by Entergy’s witness Mr. Cox with respect to similar language in the aging management review report for the SSW system (discussed below), if Entergy had credited a qualified protective life for the rubber liner, CIPP or coating (whatever the protective covering), there would be no aging effects on the underlying metal and no need for an aging management program. Hence in determining the need for an aging management program, no protective function is credited, but the aging management program included reliance on protective coatings or liner combined with inspections to insure that it remains in place.

Entergy's argument confirms PW's statement that neither the coating nor liner are credited with a protective function because there is no way to guarantee from previous experience or otherwise that either the liner or coating are, or will remain, intact. Certainly if everything operated according to design and we lived in a magical world we would not need a sufficient aging management plan and could count on liners, coatings and materials. However everything does not go according to design. We must recognize this fact and develop an aging management program that will provide assurance.

Entergy concluded with a totally overboard and wishful statement (at 19) that, "The record has a plethora of evidence concerning the protective capability of coatings (and liners) that will be set forth in Entergy's findings." Pilgrim Watch, too, has its plethora of evidence and looks forward to presenting it to the Board.

### CONCLUSION

For the forgoing reasons, the Board should deny Entergy's and NRC's Answers and allow the Motions to Strike and subsequent filings to stand.

Respectfully Submitted,



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**UNITED STATES OF AMERICA**  
**NUCLEAR REGULATORY COMMISSION**  
**BEFORE THE ATOMIC SAFETY AND LICENSING BOARD**

In the Matter of

Docket # 50-293-LR

Entergy Corporation

Pilgrim Nuclear Power Station

License Renewal Application

June 2, 2008

**CERTIFICATE OF SERVICE**

I hereby certify that the following was served on June 2, 2008: Pilgrim Watch Reply to Entergy's Answer Opposing Pilgrim Watch's Motion to Strike and Request to Reopen the Hearing and NRC Staff's and NRC Staff Response to (1) Pilgrim Watch Motion To Strike Testimony and (2) Motion to Include as Part of the Record Exhibits Attached to Pilgrim Watch Motion to Strike Testimony.

Administrative Judge  
Ann Marshall Young, Chair  
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