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- 2	UNITED STATES OF AMERICA
3	NUCLEAR REGULATORY COMMISSION
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8	IN THE MATTER OF: :
9	PUBLIC MEETING TO DISCUSS THE :
10	DRAFT SUPPLEMENTAL ENVIRONMENTAL :
11	IMPACT STATEMENT FOR LICENSE :
12	RENEWAL OF :
13	PILGRIM NUCLEAR POWER STATION :
14	
15	Wednesday
16	January 24, 2007
17	
18	Ballroom
19	Radisson Hotel Plymouth
20	180 Water Street
21	Plymouth, Massachusetts
22	
23	The above-entitled matter was convened,
24	pursuant to Notice, at 7:00 p.m.
25	BEFORE: Francis "Chip" Cameron
26	FACILITATOR
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PROCEEDINGS

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(7:00 p.m.)

3 MR. CAMERON: Apparently there was some confusion, not created by the NRC, about what time this 4 5 meeting started, so we may be joined by some guests who are driving in from the Cape who believe the meeting 6 started at 7:30 and we'll just try to accommodate them 7 8 with information when they get here. 9 And I would just like to say good evening to all of you, ny name is Chip Cameron and I would like 10 to welcome you to the NRC's public meeting tonight and 11 12 our topic for tonight is going to be the draft 13 environmental impact statement that the NRC prepared as one part of its evaluation of an application that we 14 received from Entergy corporation to renew the 15 operating license for the Pilgrim Nuclear Power Plant. 16 17 And it's my pleasure to serve as your facilitator tonight, and in that role, I'm going to try 18 19 to help all of you to have a productive meeting, and I just want to spend a couple of minutes on meeting 20

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process issues so that you'll know what to expect

tonight. And I would like to go over the format for

the meeting first and then, secondly, go over some

simple ground rules. In terms of format, basically

there is going to be two parts to the meeting, the

first part is designed to give you information on the license renewal process, what the NRC looks at in evaluating whether to grant a renewal.

And we also want to tell you about some of 4 5 the findings in the draft environmental impact 6 statement so we are going to have a couple of brief 7 presentations on that and I just want to emphasize the word draft, as this document will not be finalized 8 until we hear your comments tonight, and any written 9 10 comments that we receive and we evaluate those 11 comments. And that brings me to the second part of the 12 meeting which is to give you an opportunity to offer 13 your comments, your concerns, your recommendations to 14 us tonight and we are here to listen to that. And 15 before we move into the comment period, after the NRC presentations are done, we'll have some time for 16 17 questions, so we'll try to answer your questions as 18 best that we can.

I should mention, and I was reminded of this, that if you have a comment tonight, offer a comment tonight, it's going to carry the same weight as any written comments that we receive. Ground rules. Just one person speaking at a time, so that we can give our full attention to whomever has the floor at that time and also so that we can get a clear transcript.

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We have Marty Farley over here who is our Court Reporter, he is taking a transcript and that will be the public record of this meeting, it will be available to anybody who wants a copy, so one person at a time allows us also to have a clean transcript, we'll know who is talking.

Please try to be as concise as possible so that we can give everybody an opportunity to talk tonight and when we do go to the question portion, just please try to confine it to questions, rather than having it morph into a comment, save your comments for the comment part of the meeting.

13 And we do have yellow cards to fill out if 14 you want to make a comment, it's not a requirement, it 15 just gives us an idea of how many people we have 16 speaking tonight so that we can manage the time better, 17 but it isn't a requirement to fill one out. And we do have a number of speakers, we have some of an unknown 18 19 number coming from the Cape, so I would ask you to 20 limit your comments to approximately eight to ten minutes and that will allow us to get out of here on 21 22 time but also give you an opportunity to tell us what's 23 on your mind.

And these comments tonight help us to do two things, one, it allows the NRC staff to start

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evaluating concerns immediately, rather than waiting for the written comments. And the second thing it does is it alerts everybody else who is in the room to what some issues of concern are.

5 And lastly, and this has never been an 6 issue in Plymouth because everybody is very, very 7 polite and respectful, but just always remember to 8 exercise courtesy towards one another. You hear a lot 9 of different viewpoints at the meetings, you are not 10 going to agree with everybody, but just respect the 11 person who is talking.

12 And let me introduce the speakers for 13 tonight. First, we are going to have Alicia Williamson, who is right here, and Alicia is going to 14 15 give you an overview of the license renewal process, 16 and she is the project manager on the environmental review of the Pilgrim license renewal application and 17 18 she has been with the NRC for about five years. She has been doing environmental assessments on lots of 19 20 projects during that time and she also was a project 21 manager on the Brunswick, it's a nuclear reactor in 22 South Carolina. She was a project manager for that 23 environmental review and, in terms of education, she has a bachelors in biology and also a masters in 24 25 environmental science, both from North Carolina A&T

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State University in Greensboro, North Carolina.

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2 And after Alicia is done, we are going to 3 move right into the findings in the draft environmental impact statement and Bobbie Hurley is going to do that 4 5 for us. Bobbie is a team leader of a group of expert 6 consultants that are assisting us in doing the 7 environmental evaluation and Bobbie is with the Earth Tech company, she has about 26 years of doing these 8 9 types of environmental assessments. She has a 10 bachelors in chemistry and biology from Mary Washington 11 College and also a masters in chemistry from William & 12 Mary.

13 I would just ask you to allow Alicia and 14Bobbie to go through their presentation so that they 15 can get all that information out to you, then we'll go to questions about the presentations and we'll go to 16 17 the comments, and I would just thank all of you for 18 being here tonight and I'm going to turn it over to 19 Alicia to go through the first presentation for you. 20 These are pretty brief, for the amount of material that 21 we have, and it probably runs for about 25 to 30 22 minutes, and then we'll go on to have discussion and to listen to you. 23 Thank you.

24	MS. WILLIAMSON: Than	nk you, Chip.
25	I would also like to	extend my greeting to
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1 everyone and thank you all for coming out tonight for 2 this meeting. To begin today's presentation, I'm going 3 to briefly go over the agenda and purpose of the meeting. Next, I'll explain the NRC's license renewal 4 5 process for nuclear power plants with emphasis on the 6 environmental review process. Then Bobbie Hurley from 7 Earth Tech, the NRC contractor who helped prepare the supplemental environmental impact statement, will 8 9 present the preliminary findings of our environmental review which assesses the impacts associated with 10 operation of Pilgrim Nuclear Power Station for an 11 additional 20 years. 12

13 Then we will get into the most important 14 part of the meeting which is for us to receive comments 15 on the Pilgrim supplemental draft environmental impact statement. We will also give you some information 16 about the schedule for the balance of our review and 17 let you know how you can submit comments to us in the 18 19 future. At the conclusion of the staff's presentation, 20 we'll be happy to answer any questions. However, I must ask you to limit your participation to questions 21 related to the environmental review and hold your 22 23 comments until the appropriate time.

24 Before I begin to explain the license 25 renewal process, I would like to take a minute to talk

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1 about what we do and what our mission is at the NRC.
2 The Atomic Energy Act is legislation that authorizes
3 the NRC to issue operating licenses for a 40-year
4 license term for nuclear power reactors, this 40-year
5 term is based primarily on economic considerations and
6 anti-trust factors, not on safety limitations or
7 technical limitations of the plant.

8 The Atomic Energy Act also authorizes the 9 NRC to regulate the civilian use of nuclear materials 10 in the United States. In exercising this authority, 11 the NRC mission is threefold, to ensure adequate 12 protection of public health and safety, to promote the 13 common defense and security and to protect the 14 environment.

15 The NRC regulations also include 16 provisions for extending plant operation for up to an additional 20 years. Entergy Nuclear Operations, 17 18 Incorporated, also known as Entergy, owns and operates 19 the Pilgrim plant. On January 27, 2006 Entergy 20 submitted an application for the renewal of the Pilgrim 21 operating license for an additional 20 years, the 22 Pilgrim operating license is set to expire June 8, 23 2012. As part of the NRC's review of the Pilgrim 24 license renewal application, the staff has performed an environmental review to look at the impacts of an 25

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additional 20 years of operation on the environment.

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We held a meeting right here in this same room in May, 2006 to seek your input regarding the issues we needed to evaluate in the environmental review for Pilgrim license renewal. We indicated at that earlier scoping meeting we would return to this area to present our preliminary findings, which we have done today in the draft environmental impact statement, which is one primary purpose of today's meeting.

10 This slide presents the big picture 11 overview of the license renewal process which involves 12 two parallel paths, the safety review process shown 13 here along the top portion of the diagram using the red 14 arrows and the environmental review process shown along 15 the bottom portion of the diagram using the green 16 arrows.

An opportunity for the public to request a 17 hearing and petition for intervention on the Pilgrim 18 license renewal application was available in the 19 20 beginning of the license renewal process, two  $21^{\circ}$ contentions, one safety and one environmental, were 22 accepted by the NRC Atomic Safety Licensing Board. The 23 parties to the hearing include Pilgrim Watch, Entergy and the NRC, the Towns of Duxbury and Plymouth are 24 25 participating in the hearing process as interested

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government entities. If you would like more
 information regarding the hearing for Pilgrim, please
 see our Web site www.NRC.gov.

Next, I'm going to briefly now describe
these two review processes starting with the safety
review process. For license renewal, the safety review
focuses on aging management of systems, structures and
components important to safety, the person in charge of
this portion of the review is the safety project
management, Mr. Perry Buckberg.

Perry, could you please stand, please? 11 12 During the safety review, the staff 13 conducts audits to evaluate the adequacy of the 14 technical information in the license renewal 15 application, NRC inspectors perform on-site inspections 1.6 to verify that the applicant's aging management 17 programs and activities are implemented or have been 18 planned for implementation.

19 The results of the safety review are then 20 documented in a safety evaluation report and in an 21 inspection report, the results of the safety evaluation 22 report and inspection report are independently reviewed 23 by the Advisory Committee on Reactor Safeguards or 24 ACRS. The ACRS reviews this information, form their 25 own conclusions and recommendations and report these

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conclusions and recommendations directly to the Commission. Before I begin the discussion on the environmental review, I would like to mention a few areas of NRC oversight that are separate from the license renewal process, these areas include emergency planning, security and current safety performance.

7 The NRC monitors and provides regulatory oversight of activities in these areas on an ongoing 8 basis under the current operating license. 9 Therefore, we do not reevaluate them in license renewal because 10 11 they are subject to ongoing NRC inspections and 12 oversight, this oversight would continue in the extended period of operation if the license is granted. 13 Any issues identified in any of these areas are 14 15 immediately addressed under the current operating 16 license.

One important element of the ongoing 17 18 regulatory oversight process is the NRC resident inspectors. Resident inspectors are based at all 19 20 operating nuclear power plants, their job is to carry 21 out safety, our safety mission, on a daily basis by 22 ensuring that these plants have acceptable safety 23 performance and are in compliance with our current, excuse me, with the current regulatory requirements. 24 25 These inspectors are considered the eyes and the ears

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1		of the NRC.
2		Today, we have here in the audience with
3		us the senior resident inspector stationed at Pilgrim,
4		Mr. William Raymond.
5		Could you stand up for us, please? Thank
6		you.
7	•••	For more information about the reactor
8		oversight process, you can access the Internet address
9		listed here at the bottom of the slide.
10		The second part of the license renewal
11		process involves the environmental review, this slide
12		outlines the steps of the environmental review process.
13		The environmental review, which is the subject of
14		today's meeting, evaluates the impacts of license
15		renewal in a number of areas including ecology,
16		cultural resources and socioeconomics, in addition to
17		many others. The environmental review involves scoping
18		activities and development of a document called a draft
19		supplement to the generic environmental impact
20		statement for license renewal.
21		The draft supplement to this generic
22		environmental impact statement provides the staff's
23		preliminary assessment of environmental impact during
24		the renewal period, the draft environmental impact

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statement for Pilgrim was published for comment on

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December 8, 2006. If you would like a copy and have not previously received one, we have plenty available in the rear of the room, we are here to discuss and take your comments on this document. In July, 2007 we will be issuing a final version of the Pilgrim supplemental environmental

comments that we receive here today at this meeting or ones that we receive in writing.

impact statement, the document will address all

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10 Next, I would like to give you a little information on the statute that governs the 11 12 environmental review. The statute that governs the 13 environmental review is the National Environmental Policy Act of 1969, also commonly referred to as NEPA, 14 NEPA requires that all federal agencies follow a 15 16 systematic approach in evaluating potential environmental impacts associated with certain actions. 17 . We at the NRC are required to consider the impacts of 18 19 the proposed action and any mitigation for those 20 impacts we consider to be significant, we are also 21 required to consider alternatives to the proposed 22 action.

The NRC has determined that an
environmental impact statement or EIS will be prepared
for any proposed license renewal of nuclear plants.

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1 NEPA and our environmental impact statement for license 2 renewal are disclosure tools, they are specifically 3 structured to involve public participation and obtain 4 public comment, this meeting facilitates the public 5 participation in our environmental review.

6 In the 1990s, the NRC staff developed a 7 generic environmental impact statement or generic EIS 8 that addresses a number of issues that are common to 9 all nuclear plants. As a result of that analysis, the 10 NRC was able to determine that a number of 11 environmental issues were common or similar to all 12 nuclear power plants.

13 The staff is supplementing that generic 14 EIS with this site-specific environmental impact 15 statement or supplemental EIS that addresses issues 16 specific to the Pilgrim facility. Together the generic 17 EIS and supplemental EIS form the staff's analysis of 18 the Pilgrim site. Also, during the review, the staff 19 searches and evaluates any new and significant 20 information that might call into question the 21 conclusions that were previously reached in the generic 22 EIS for those issues that were common to all power 23 plant sites, the staff searches for new issues not addressed in the generic EIS as well. 24

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This slide outlines our decision standard

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for the environmental review, I'll give everyone a moment to take time out and read it. Now, simply stated, what you read here on the slide is basically are the environmental impacts of license renewal great enough that maintaining the license renewal option for Pilgrim is unreasonable.

Listed are important milestone dates for
the Pilgrim environmental review, the dates highlighted
in green indicate opportunities for public comment on
the environmental review.

11 We received Entergy's application 12 requesting license renewal for Pilgrim on January 27, 13 2006, a public scoping meeting was held right here in 14 this exact room back on May 17, 2006 as part of the 15 scoping process. Many of you here today may have 16 attended that meeting and provided comments to us, all 17 comments received during the scoping period, including 18 comments from the May 17 scoping meeting, that were 19 within the scope of the environmental review are 20 contained in Appendix A of the draft environmental impact statement, out of scope comments were answered 21 22 in the scoping summary report.

23 Copies of both the scoping summary report 24 and the draft environmental impact statement are 25 available at the NRC display tables in the rear of the

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room.

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2 On December 8, 2006 the Pilgrim draft supplement to the generic environmental impact 3 statement was issued, this document is the subject of 4 today's meeting. We are accepting public comments on 5 the draft until February 27, excuse me, February 28, 6 7 2007. 8 This concludes my remarks on the license 9 renewal process, I'm now going to turn the meeting over to Ms. Bobbie Hurley from Earth Tech and she will 10 explain our preliminary findings. 11 12 MS. HURLEY: Thank you, Alicia. 13 As Alicia said, my name is Bobbie Hurley 14 and I am the NRC Contract Manager at Earth Tech and I 15 am currently leading the Earth Tech project team for the Pilgrim environmental impact statement. 16 The NRC contracted with Earth Tech to evaluate the 17 18 environmental impacts of license renewal at Pilgrim 19 Nuclear Power Station, the environmental impact 20 statement project team consisted of scientists and 21 engineers from both Earth Tech and NRC.

The overall team expertise for the environmental impact statement evaluation is shown on this chart and includes the following disciplines, atmospheric science, socio economics and environmental

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justice, archeology and historic resources, aquatic and terrestrial ecology, radiation protection and land use.

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3 Before I get into the environmental findings, I would like to provide you a little more 4 5 detail on the environmental analysis approach. In the mid 1990s, NRC evaluated the impacts of all operating 6 nuclear power plants across the country, NRC looked at 7 . 8 92 separate impact areas and they found that, for 69 of 9 these areas, the impacts were the same for all plants 10 that had similar features. NRC called these category 1 11 issues and they were able to make generic conclusions 12 that all the impacts on the environment would be small, 13 the NRC published these conclusions in the generic 14 environmental impact statement that Alicia mentioned 15 1996.

The NRC was unable to make similar generic . 16 17 determinations for the remaining 23 issues. As a 18 consequence, they decided to prepare supplemental 19 environmental impact statements for each plant to 20 address the remaining 23 issues, the Pilgrim 21 supplemental environmental impact statement is the 22 document that we are here discussing today, it is a 23 supplement to the generic environmental impact 24 statement specific to the, to the Pilgrim Nuclear Power Plant. 25

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1 This slide shows the processes used to 2 evaluate the category 1 and category 2 issues in the 3 Pilgrim environmental impact statement, only certain 4 issues addressed in the generic EIS are applicable to 5 Pilgrim.

The project team evaluated all category 1 6 issues relevant to Pilgrim to determine if the 7 8 conclusions reached in the generic EIS are still valid, 9 specifically we looked for any new and significant 10 information that might change the conclusions of the 11 If we found no new and significant information, GEIS. then we adopted the findings of the generic 12 13 environmental impact statement. If new and significant  $14^{-1}$ information was identified, then site-specific analysis 15 would be performed for each of those issues.

16 For Pilgrim, we did not find any new and 17 significant information for any category 1 issues and 18 therefore, for all category 1 issues, we adopted the 19 conclusions of the generic EIS. For all category 2 20 issues relevant to Pilgrim, we performed a 21 site-specific analysis and this constitutes the bulk of 22 the supplemental environmental impact statement that we 23 are here to discuss tonight. Our analysis also includes a process to identify and evaluate any new 24 25 potential issues that may not have been considered at

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## the time that the GEIS was produced.

Potential new issues may be, may have been 2 3 identified through receipt of comments during the scoping period, through the environmental on-site audit 4 5 or during the environmental impact analysis process. If any new issues were identified, then we would 6 perform a site-specific analysis. If we determined 7 that there were no additional issues, then we would go 8 9 no further.

In the case of Pilgrim, we did find one issue, that would be the essential fish habitat, this was something that was not considered at the time the GEIS was published. As a result, we performed an essential fish habitat assessment specifically for the Pilgrim site and it is included in Appendix E of the draft supplemental EIS.

This, I'm sorry, this slide outlines how 17 impacts are quantified. In the generic EIS, NRC 18 1.9 defined three impact levels that, the three impact 20 levels that are shown here, small, moderate and large, the definitions used are consistent with the guidance 21 from the Council on Environmental Quality. 22 As an 23 example of how we use these different impact levels, I will use the Pilgrim cooling system as an example. The 24 Pilgrim cooling system has the potential to have an 25

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impact on aquatic resources, these impacts can occur from entrainment and impingement of organisms into the cooling system and also through thermal shock.

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And to give an example of how this works, 4 in our review, if the loss, if we determined that the 5 loss of aquatic resources is so small that it cannot be 6 detected into the, detected based in relationship to 7 8 the total population in the Western Cape Cod Bay or the impacts have not destabilized the aquatic resources, 9 10 then we would make the determination that the impact is If, however, the losses of aquatic resources 11 small. 12 decline and the decline is measurable and then 13 stabilizes at a lower level, we would call that a moderate impact. If the losses to the aquatic 14 resources decline to a point where they cannot be 15 stabilized and they continue to decline, then they 16 would be classified as a large impact. 17

18 When the project team evaluated the 19 impacts from the continued operation at Pilgrim, we 20 considered information from a wide variety of sources, 21 as shown here on this slide. We used information, we used information in the license renewal application, 22 23 including information provided by Entergy in their environmental report. We conducted a site audit in May 24 of 2006 during which time we toured the plant, talked 25

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to plant personnel and reviewed documentation on plant 1 operations, we also spoke to federal, state and local 2 officials, permitting authorities and social services. 3 We also considered the comments received during the 4 public scoping meeting and received during the full 5 scoping period. All of this information forms the 6 basis of analysis and preliminary conclusions that we 7 presented in the draft, the draft Pilgrim supplemental 8 environmental impact statement. 9

10 The environmental impact statement 11 considers the environmental impacts of continued 12 operations of the Pilgrim Nuclear Power Station during 13 the 20-year license renewal period, that is 2012. 14 through 2032.

15 Next, I'll take a few moments to identify 16 the highlights of our review, specifically the cooling 17 system, radiological impacts, threatened and endangered 18 species, cumulative impacts and the impacts of 19 postulated accidents and severe accident mitigation 20 alternatives.

The first set of issues that I'm going to talk about relate to the cooling system. There are three category 2 issues relevant to the cooling system at Pilgrim, these include entrainment, impingement and heat shock. Entrainment refers to the process where

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very small aquatic organisms are pulled into the
 cooling system, the majority of these organisms
 generally experience mortality due to physical,
 chemical or thermal impacts.

5 Impingement refers to larger organisms being pulled into the cooling system and pinned onto 6 the debris screens of the system, they are not draw 7 8 into the cooling system and generally experience a 9 lower mortality rate than that seen in entrainment. 10 The system at Pilgrim incorporates traveling screens 11 that move any impinged organisms off the debris screens 12 into a fish return system and back into the bay.

13 Heat shock, the third category 2 issue, 14 refers to when relatively warm water is released into 15 colder water, aquatic organisms adapted to the cooler 16 water can lose equilibrium or die when exposed to 17 significantly warmer water. Our review of the category 18 2 issues indicate that the Pilgrim cooling system may 19 have a moderate impact on the local Winter Flounder 20 population due to entrainment, a moderate impact on the 21 Jones River population of Rainbow Smelt due to 22 impingement and a small to moderate impact on all other 23 marine aquatic resources. However, it was determined that the impacts of heat shock would be small. 24

Radiological impacts were determined to be

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category 1 issues in the generic EIS, that is the 1 2 impact of radiological releases during nuclear power plant operations during the 20-year renewal period 3 would be small. However, because these releases are a 4 concern to many people, we want to discuss them in a 5 little more detail here tonight. All nuclear power 6 plants release some radiological effluents to the 7 8 environment, although it should be noted that it is 9 currently Pilgrim's operating policy not to routinely release liquid radioactive effluents. 10

During our site visit, we looked at the 11 12 documentation for effluent releases and the radiological monitoring programs at the plant, as well 13 14 as the commonwealth's independent monitoring programs, 15 we looked at how the gaseous and liquid effluents were treated and released, as well as how the solid wastes 16 were treated, packaged and shipped. We looked at how 17 18 the applicant determines and demonstrates that they are in compliance with the regulation for release of 19 20 radiological effluents, we also looked at data from the 21 on-site and near site locations that the applicant 22 monitors for airborne releases and direct radiation, as well as other monitoring stations beyond the site 23 24 boundary, including locations where water, fish and 25 food products are sampled.

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1 In addition, we reviewed a number of 2 studies, including the Southeastern Massachusetts Health Study and BEIR 7. BEIR 7 stands for the, it's 3 the study that's termed a Biological Effects of 4 5 Ionizing Radiation, it was the seventh addition of a National Academy of Science report. Anyway, we looked 6 at other studies, including these, to determine if 7 8 there have been any new and significant findings applicable to the Pilgrim supplemental EIS. Our 9 evaluation, which is presented in Section 4.7 of the 10 draft supplemental EIS, determined that these studies 11 12 do not constitute new and significant information.

13 In summary, we found that the average and 14 maximum calculated doses for a member of the public are 15 well within the annual limits that are considered 16 protective for human health. Since releases from the 17 plant are not expected to increase during the 20-year relicense term and since we also found no new and 18 19 significant information related to this issue, we 20 adopted the generic conclusion that the radiological 21 impacts to human health and the environment are small.

There are 11 marine aquatic and five terrestrial and fresh water aquatic federally listed threatened and endangered species that have the potential to occur in the vicinity of Pilgrim or its

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1 transmission lines. We prepared a detailed biological assessment to analyze the effects of continuing 2 3 operation and relicensing of Pilgrim and it is included in Appendix E of the draft supplemental EIS. Based on 4 5 the biological assessment, additional independent 6 analysis, discussions with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, the 7 8 staff's preliminary determination is that the impact of operation of the Pilgrim plant during the license 9 renewal period on threatened or endangered species 10 would be small. 11

12 Cumulative impacts are the impacts of the 13 proposed action, in this case license renewal, taken 14 together with other past, present or reasonably 15 foreseeable future actions, regardless of what agency 16 or person undertakes those actions. The cumulative 17 impacts are evaluated to the end of the 20-year licensing, license renewal term. Our preliminary 18 19 determination is that the cumulative effect impacts 20 resulting from the operation of the Pilgrim plant 21 during the license renewal period would be small for 22 all resources, with the exception of marine aquatic 23 species which would experience a small to a moderate 24 cumulative impact.

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The team also looked at the impacts

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related to the uranium fuel cycle and solid waste 1 2 management, as well as decommissioning of Pilgrim. In the generic environmental impact statement, NRC 3 considered impact areas associated with these topics as 4 5 category 1 issues, our team found no new and significant information and therefore adopted the 6 generic conclusion. As part of the environmental 7 review process, we also evaluated a number of 8 alternatives to license renewal. Specifically, we 9 looked at the impacts of replacing Pilgrim power with 10 power from other sources. 11

12 Pilgrim has a power capacity of 715 Alternatives that the team looked at 13 megawatts. 14 included a no action alternative, that is, not renewing 15 the license. We looked at replacing Pilgrim generation 16 with generation from new power plants, either coal, natural gas or new nuclear, we looked at the impacts 17 18 and capabilities of providing that replacement power 19 through purchasing power. We also looked at other 20 technologies, such as wood, wind and solar power, to 21 replace Pilgrim's capacity and then we looked at a 22 combination of alternatives to replace that capacity. 23 For each alternative, we looked at the same types of 24 issues that we did when evaluating the Pilgrim plant's 25 license renewal. The team's preliminary conclusion is

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1 that the environmental impacts of the selected 2 alternatives would reach moderate or large significance 3 in at least some categories.

4 To summarize, our conclusions for the 5 environmental review for category 1 issues presented in 6 the generic EIS that relate to the Pilgrim plant, we 7 found no information that was both new and significant. 8 Therefore, we have preliminarily adopted the generic 9 EIS conclusions that impacts associated with these 10 issues would be small.

In the Pilgrim draft supplemental EIS, we 11 12 analyzed the remaining category 2 issues pertinent to the Pilgrim plant and determined that the environmental 13 14 impact resulting from these issues was small in all 15 categories with the exception of a moderate impact on 16 the local Winter Flounder population due to entrainment, moderate impacts to the Jones River 17 18 population of Rainbow Smelt due to impingement and a small to moderate impact on all other marine aquatic 19 20 resources. Lastly, we found the environmental impacts 21 of alternatives in at least some categories would reach 22 moderate or large levels of significance.

Okay, now I'm going to switch gears
slightly and present the findings of the accident
analysis for Pilgrim. We have in the audience today

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Mr. Bob Palla.

If you could stand, Bob?

3 He is with NRC and was responsible for 4 this portion of the analysis. The EIS evaluated 2 5 classes of accidents, design basis accidents and severe 6 accidents. Design basis accidents are those accidents 7 that the plant is designed to withstand without risk to 8 the public, the ability of the plant to withstand these 9 accidents has to be determined before the plant is 10 granted a license. Since the licensee has demonstrated 11 acceptable plant performance for the design basis 12 accidents throughout the life of the plant, the Commission found in the generic EIS that the 13 14 environmental impacts of design basis accidents is 15 small for all plants.

16 The second category of accidents evaluated in the generic EIS were severe accidents. 17 Severe accidents are, by definition, more severe than design 18 19 basis accidents because they could result in 20 substantial damage to the reactor core. The Commission 21 found, in the generic EIS, that the risk of a severe 22 accident is small for all plants. Nevertheless, the 23 Commission determined that alternatives to mitigate severe accidents must be considered for all plants that 24 25 have not done so, these alternatives are called SAMAs,

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severe accident mitigation alternatives. The SAMA
 evaluation is a site-specific assessment and is
 considered a category 2 issue.

The purpose of performing the SAMA 4 evaluation is to ensure that plant changes with the 5 potential for improving severe accident safety 6 performance are identified and evaluated. The scope of 7 the potential plant improvements that were considered 8 9 include hardware modifications, procedural changes, 10 training program improvements and basically a full spectrum of potential changes. The scope includes 11 SAMAs that would prevent core damage as well as SAMAs 12 13 that improve containment performance, given that core damage could occur. 14

15 The preliminary results of the SAMA evaluation are summarized on this slide, there were 281 16 candidate improvements identified for Pilgrim. 17 The number of candidate SAMAs were reduced to 59 based on a 18 multi-step screening process, a more detailed 19 20 assessment of the risk reduction potential and 21 implementation cost was then performed for each of the 22 remaining 59 SAMAs. A total of seven SAMAs were 23 identified as potentially cost-beneficial, five of these potentially cost-beneficial SAMAs were identified 24 25 in the environmental report, the remaining two SAMAs

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1 were identified as a result of NRC analysis. 2 None of the potentially cost-beneficial 3 SAMAs relate to managing the effects of plant aging during the period of extended operation. Accordingly, 4 they are not required to be implemented as part of 5 license renewal. Regardless, the NRC staff considers 6 7 that further evaluation of the potentially cost-beneficial SAMAs by Entergy is warranted. 8 9 This concludes my remarks and now I would like to turn the program back over to Alicia. 10 This is a recap of where 11 MS. WILLIAMSON: 12 we are in the environmental review. We issued the draft on December 8, 2006, we are currently in the 13 14 middle of the public comment period that is scheduled 15 to end on February 28, 2007, we are expected to, we 16 expect to address all public comments received during 17 the comment period, make any necessary revisions to the draft and issue a final environmental impact statement 18 in July, 2007. 19 20 This slide identifies me as your primary 21 point of contact at the NRC for the Pilgrim license

21 point of contact at the NRC for the Pilgrim license 22 renewal environmental review, it also identifies where 23 documents related to the Pilgrim review may be found in 24 the local area, including the Plymouth, Duxbury and 25 Kingston Libraries. At the bottom of the slide is the

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Internet address where anyone can directly access the Pilgrim EIS electronically.

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3 There are several ways you can provide your comments on the Pilgrim draft supplemental 4 5 environmental impact statement, you can provide comments today during the comment period of this 6 7 meeting and, as you may have heard several times, those 8 comments will carry the same weight as any other 9 comments that you may provide to us in writing. If 10 perhaps you are not ready to provide a comment today, 11 you can send your comments to us via regular mail, you 12 can also send us your comments to this e-mail address 13 we have specifically set up for the Pilgrim 14 environmental review, PilgrimEIS@NRC.gov, and if you 15 happen to be in the Rockville area, you can submit 16 your comments in person at the address listed at the 17 bottom.

18 With that, I would like to again thank 19 every one for coming out tonight, we look forward to 20 receiving your comments by February 28, 2007 and I'll 21 turn the meeting back over to Facilitator Cameron.

22 MR. CAMERON: Thank you, Alicia, and thank 23 you, Bobbie, for those presentations.

24 We have some time before we go to formal 25 comments for questions on what you've heard and let's

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go to Sheila. And Sheila, could you just introduce
 yourself to us, please?

3 MS. HOLLIS: Sure. Sheila Hollis on behalf of the Town of Plymouth. A question, and I 4 5 think it probably goes to Ms. Hurley, with respect to 6 the SAMAs and the seven SAMAs that were identified that 7 are not considered to be part of the aging process review that's included in this, in the EIS process, 8 9 however, what happens then when these are identified, 10 these SAMAs, these seven that sort of rose to the top through Entergy's self-evaluation and then the NRC 11 12 staff's input, if they are not included in the 13 relicensing proceeding, are they then required to be 14 implemented through another process at the NRC or is it left in the hands in the plant owner/operater to 15 implement them of their own volition? 16

17 MR. PALLA: Okay. The licensee has 18 identified a number of potentially cost beneficial 19 SAMAs, they have indicated that they were going to 20 enter these into their process for further evaluation. 21 Now, as was stated on the slide, they are not aging, 22 they are not related to managing the effects of aging 23 during the renewal period and therefore they are not required to be implemented as part of license renewal. 24 What the process has been is that we would look at, 25

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well, number one, you are pretty much operating in voluntary space on these SAMAs as far as license renewal goes, they are not required, they therefore need not be implemented.

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5 We have identified a number of potentially cost beneficial in previous reviews, the general · 6 7 process is for the licensees to look at these further. 8 And we don't have a systematic process for tracking 9 what they've done with them, but anecdotal evidence in discussions that we've had indicate that licensees 10 11 would generally implement a subset of these that they thought were cost beneficial. Now, as far as process 12 goes, the kind of, the enhancements that are identified 13 14 in the SAMA space would basically become potential 15 improvements that could be implemented as part of the 16 current licensing basis.

17 And under Part 50, if the benefits of 18 these SAMAs rose to the point that they could be 19 perceived to have a significant reduction in risk, then 20 the process would be available to back-fit the 21 enhancements, so we would go through 10 CFR Part 50.109 22 potentially to pursue a requirement to implement them, 23 but that would generally require a need to be cost 24 justified, as well as significantly reduce risk and the 25 significant is always a touchy issue, whether it's

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1 three percent, five percent reduction significant. 2 Fifty, eighty percent would be, but the kind of risk 3 reduction that we see with SAMAs is generally on the order of a few percent. 4 5 So that would be the process and it would really only be expected to be implemented should the 6 7 SAMA analysis reveal potential enhancements that really 8 significantly implement risk and for which the licensee 9 does not, on their own volition, implement them. 10 MS. HOLLIS: Then it wouldn't be part of 11 the ongoing reactor oversight process? 12 MR. PALLA: It would, well it would, it 13 doesn't fall into a nice, clean box. It wouldn't be 14 part of the license renewal process, it would have to 15 be dealt with as an operating plant issue. 16 MS. HOLLIS: So it would be part of the 17 reactor oversight program of the NRC, the reactor 18 oversight group would come back and say you've 19 identified these seven items that are cost beneficial under the SAMA analysis internally performed by Entergy 20 and enhanced by the NRC? 21 22 MR. PALLA: Yeah. I just don't know that 23 oversight is the right process. If you are thinking of the normal risk informed reactor oversight process, I 24 25 don't think there is a mechanism within that process, I

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1 think this would have to be taken up as an initiative 2 really on the part of the staff to move to back-fit 3 these improvements.

4 MR. CAMERON: It seems that, Sheila, do
5 you have, do you have anything else you want to --?
6 MS. HOLLIS: I did have one other question

7 with respect to the Winter Flounder and the Rainbow Smelt entrainment and impingement issues. As a result 8 9 of the studies by the NRC and its consultant, Earth 10 Tech, are there specific recommendations that would be followed up on by the plant owner/operator to improve 11 12 the situation, whether it's through monitoring or 13 through other steps that could be taken, to improve the 14 survivability of these Winter Flounder and the Rainbow 15 Smelt?

16 MS. WILLIAMSON: Basically, in regards to 17 the moderates for the impingement and entrainment of 18 the Winter Flounder and Rainbow Smelt, that is outside 19 of the NRC's regulatory authority to require the 20 licensee to implement any sort of mitigation measures. 21 Basically, what we do in our EISs are we disclose the 22 impacts, the jurisdiction lies with the U.S. EPA, Region One in Boston on exactly what type of mitigation 23 measures the plant, if they feel that those, their 24 25 results are determined that the, when they do their

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NPDES permit, okay, let me back up, I'm saying too many
 acronyms.

3 They have a permit, Entergy is applying or 4 has reapplied for their National Pollutant Discharge 5 Elimination System permit which they are required to 6 In our regulations, we require that, that permit have. 7 is or the permitting authority is the U.S. EPA, Region 8 One in Boston. Now they are the persons who would be 9 able to exercise that authority in determining, well 10 when they do their NPDES permit evaluation, which they 11 are currently doing now, I think we expect the results 12 this year, if I'm not mistaken.

13 Is that correct, biologists? Thank you. 14 And in that permit or in their, excuse me, 15 analysis, they would determine exactly what mitigation 16 measures or conservation measures would have to take 17 place that Entergy would have to put into place at 18 Pilgrim, we do not have that authority, although we did 19 mention mitigation measures, possible mitigation measures that we felt, that were told to us. We talk 20 21 about them a little bit in detail and I think it's 22 section 4.14 in the SEIS, in the supplemental EIS, so 23 that can maybe give you an idea of what they possibly 24 might say, although we do not know what they are going 25 to say.

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1 MS. FRANOVICH: Rani Franovich, Chief of 2 the Environmental Review Branch. 3 As Alicia said, we talk about what the 4 possible mitigation measures might be, the applicant could very well voluntarily decide to implement those 5 6 but we would not impose a requirement that they do so. 7 MR. CAMERON: Do we at least give, do we 8 give the EPA the results of our environmental impact 9 statement? 10 I think what Chip asked is MS. FRANOVICH: 11 do we give the results of our EIS, our environmental assessment, to the EPA and, yes, we do, we actually 12 13 consult with them during our review and solicit input 14 from them on our review, and they get a copy of the EIS 15 and they always comment, yes. .16 MR. CAMERON: So the comments that we 17 receive on the draft environmental impact statement, 18 for example, Pine Du Bois comments today, will the EPA 19 also have access to those in reviewing the NPDES 20 permit? 21 MS. FRANOVICH: Well those comments are 22 made publicly available so they would certainly have 23 access to them. Whether they would consult with them 24 or not, I don't know.

25 MS. WILLIAMSON: Actually, I would like to

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add something to that, Chip. Yes, they would be 1 available because her comments will be published in the 2 final environmental impact statement in their entirety, 3 so EPA definitely gets a copy, will get a copy of that 4 5 final environmental impact statement. Now if they include it in their review during the NPDES permit 6 review, I can't specifically say, although I'm pretty 7 8 sure they would, so they will see those comments. MR. CAMERON: Okay and, just to summarize, 9 I think, Bob, correct me if I'm wrong, but largely your 10 response to Sheila's question about SAMAs, probably 11 12 your first statement is we are in voluntary space here and it's basically left up to the licensee, it seems, 13 on whether they are going to implement a particular 14 Is that accurate? 15 SAMA. MR. PALLA: Unless it rose to a level that 16 is obviously a significant potential reduction in risk 17 18 and it was not being acted upon. MR. CAMERON: Okay, thank you for those 19 20 questions, Sheila. 21 Do we have other questions out here before 22 we got to comments? Oh, yes? And please introduce 23 yourself to us. 24 My name is Diana Webke, MS. WEBKE: Hi. 25 I'm just an independent journalist. Neal R. Gross & Co., Inc.

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1 One of the questions I had is whether or 2 not the PowerPoint presentation is available on-line, if that can also be on the Web site? 3 MR. CAMERON: Sure. 4 5 MS. FRANOVICH: The presentation will be made available when we issue a summary of the meeting, 6 7 we'll include the handouts. 8 MR. CAMERON: And when would, is it going 9 to be available electronically though? MS. FRANOVICH: Alicia indicates it will 10 be available before then as well. Next week? 11 12 MS. WEBKE: On the Web site? 13 MR. CAMERON: Electronically, okay. 14 MS. FRANOVICH: On the Web site. 15 MR. CAMERON: And did you have another 16 question, Diana? 17 MS. WEBKE: I think, from my 18 understanding, you said that normal, under normal 19 operation, that there is always some radioactive effluents that goes into the environment, is that 20 21 correct? Was that ---22 MR. CAMERON: Bobbie, maybe you could, 23 whoever is going to answer this, can they go to the 24 microphone? 25 MS. FRANOVICH: The answer is, yes, that's Neal R. Gross & Co., Inc. Washington, D.C. (202) 234-4433

1 correct.

2 MS. WEBKE: Okay. And then I know, I 3 didn't write down what the moderate one was, but I know small means there is no effect on the environment, but 4 it's moderate for marine aquatics, can you be any more 5 specific or go over what moderate means as to the 6 7 effect on the environment, the effect on the fish and 8 the effect on people? 9 Okay, Bobbie, could you MR. CAMERON: 10 just, you know, give us a summary of what that means in specifics? 11 12 MS. HURLEY: Basically, there are three 13 definitions for small, moderate and large, and the small is when you have an effect that's not really 14 15 detectable or it's too small to destabilize or have a 16 noticeable impact on an environment, that would be a 17 small impact. The moderate is something you can see, it's noticeable, but it is not destabilizing to a point 18 19 that it, it does stabilize at some point, it does not 20 keep going down, down, down. It may destabilize but 21 then stabilize back at some lower level than where it 22 was initially, so that would, for example, help me out 23 here, Alicia. 24 You could have a population of fish where

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you have some loss of the overall total population but

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that loss is just lower, it still stabilizes and it 1 2 continues to go about it's normal way, just maybe at a lower level. Typically, the issue with the aquatic 3 organisms is entrainment, entrap, entrainment, 4 5 impingement and thermal shock and the impingement, where is my slide? The entrainment is when very small 6 7 organisms get pulled into the system and impingement is 8 where larger organisms sort of get pulled onto the 9 They don't get pulled all the way through the screens. 10 system, they get pulled onto the screens, there is some 11 mortality but many of the fish are pushed off of the 12 screen and put back into the system, back into the bay, 13 back into the river and they continue to live, so there 14 is going to be a lower mortality rate then. 15 But that was the, the other question was 16 what is moderate and large, but the, did that basically answer your questions on --17 18 MS. WEBKE: The fish are going into the 19 power plant and then back out into the ocean--20 MS. HURLEY: Well the cooling--21 --after they are being MS. WEBKE: 22 radiated or --23 MS. HURLEY: No, that's not really a 24 radiation issue. In the cooling system, water is 25 pulled in to cool the reaction system and so as you are

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pulling this water into the system, you are going to be 1 2 pulling organisms with the flow of the water, okay? Some very, very small organisms are going to go all the 3 way through the system and probably die from heat, from 4 5 physical or chemical reactions, not really, this is not really a radiological issue, it's more of a 6 physical/chemical issue, and so those will, you'll have 7 8 some mortality. 9 The other option is, again, the water is 10 being pulled into the system, and now we've got bigger 11 fish, and there are screens there and so the little 12 things can get through the screens but the bigger 13 things get stuck on the screens. 14 MR. CAMERON: We need to really get you, 15 all right, thank you. Thank you, Bobbie. 16 Do we have another, let's take one more 17 question here and let's go to comment, and please 18 introduce yourself, sir. 19 MR. O'CONNOR: Paul O'Connor, I live in 20 Orleans on Cape Cod. 21 There was an indication that radioactive 22 material is released in the effluents, would you 23 explain whether it's monitored, measured? Whether there is a limit, that that is intended to limit the 24 amount? It's not just released into the atmosphere, is 25

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MR. CAMERON: Well there is limits and we are going to go to Rich. Rich, can you do this one? There is both limits and monitoring, as Rich will explain.

6 MR. EMCH: My name is Rich Emch, I'm a 7 health physicist, I work for the U.S. Nuclear 8 Regulatory Commission.

Paul, typically there is a small amount of 9 radioactive material released in the gaseous effluents 10 from the plant on a fairly regular basis, it is 11 12 monitored before the, before it is released and there 13 is a section of the environmental statement that we were talking about, that they talked about earlier, it 14 talks about how much is normally released, it talks 15 about what kinds of doses that might cause to members 16 of the public. 17

And what Bobbie was talking about earlier 18 is, in recent years, Entergy has been pretty successful 19 20 at controlling water inventory in the plant such that 21 they did not have to make any liquid releases and the 22 expectation is they are going to be pretty successful at that in the future. So that's why we are saying 23 24 what she said, in recent years they have had some 25 success with not being able to make liquid releases.

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1 However, there have been times in the past and there 2 could be times in the future when they might also 3 release small amounts of radioactive material in their 4 liquid releases. Those too would be monitored and those, and our expectation is those too would be well 5 6 within the dose limitations. 7 Does that cover everything for you, Paul? MR. CAMERON: Thank you, Rich. 8 9 We are going to go to listening to your 10 comments and our first three speakers are Bob Haynes, 11 Garry Sullivan and Joyce McMahon, and then we are going 12 to go to Mary Lampert, Bill Harris and Brian Thurber. 13 So, Bob? Bob Haynes. He's on the way up. 14MR. HAYNES: I'm Bob Haynes, President of 15 the Massachusetts AFL-CIO, I represent 400,000 working 16 families here in the Commonwealth of Massachusetts and 17 I get to do testimony at the statehouse and 18 occasionally at Congress or whatever. 19 And I have to say, first of all, you guys are all workers and I've never been at a hearing where 20 21 people ask questions and then people that were sent here to answer them answer them, so I congratulate you 22 23 all. This executive summary, this impact study is a 24 terrific piece of work. It's a little too 25 comprehensive for me, but I congratulate you for your

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good work.

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2 I'll try to be as brief as I can. 3 Obviously I'm here to say that we need this power--

MR. CAMERON: Would it help you, you can come up here and you can just put your notes down, it may be easier for you.

7 MR. HAYNES: We obviously need this power, 8 it's reliable, it's safe, it's low cost. We need the 9 Pilgrim Nuclear Power Station. We frequently hear in 10 Massachusetts that we are losing population, we are 11 losing jobs, especially young people, to other parts of 12 the country where work is more plentiful and cost of 13 living is lower. The consequences of loss of the 14 people and loss of jobs means the rest of us need to 15 pick up a higher proportion of those costs here in the Commonwealth. 16

17 And one of the big costs, one of the big 18 cost drivers in the Commonwealth for families obviously 19 is higher energy cost and one way to stem the tide, if 20 you will, is to keep Pilgrim open and in operation. 21 Pilgrim provides some of the lowest cost and most 22 reliable power available on our grid and another price 23 contributor is the demand for electricity in 24 Massachusetts is growing, but new supplies are not. Ιf 25 you are in some of our urban areas, there is a

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tremendous amount of growth taking place, some major buildings being constructed across this Commonwealth.

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And when you take a look at the new 3 economy here in the Commonwealth of Massachusetts, 4 5 biotechnology, health care, computer technology, developers, all require vast amounts of energy to 6 supply the laboratories and the life saving medical 7 8 equipment, clean rooms and data centers. Obviously working families here in this Commonwealth need these 9 industries in this new economy to thrive. 10 Massachusetts has gone through a tremendous transition 11 12 in the last ten years from a manufacturing-based economy to this sort of new age economy, if you will. 13

We need the energy produced at Pilgrim for 14 our necessities and for those new technologies that 15 become staples to our way of life. We need nuclear 16 power here in the Commonwealth, we need Pilgrim for 17 three reasons pretty simple to me, as a representative 18 of 400,000 working families in the commonwealth. 19 The · three reasons are jobs, jobs and jobs. We are talking 20 21 about losing 700 good jobs here at the station, 22 including 400 union workers, and I will say about the 23 400 union workers that they are highly trained, highly 24 skilled, incredibly experienced professionals that are 25 hard to replicate in this economy and we don't want to

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1 lose these good jobs.

2 These workers keep Pilgrim Nuclear Power 3 Station safe, and productive and to not renew this license would be to displace them and that would 4 5 jeopardize our energy supply, hurt our local economy 6 and devastate their families. There is an obviously 7 economic impact, \$135 million in annual economic 8 activity. A very significant fact is that the Pilgrim 9 plant purchases services from more than 75 10 Massachusetts companies, so you can see that the spread 11 of that economic impact is dramatic here. 12 Let me just close, let me just be as brief 13 as I can here. 14 From a regional economic jobs and quality 15 of life standpoint, we need both the electricity and 16 the jobs that Pilgrim Nuclear plant provides. If we 17 know that the plant is safe, which it is, if we know 18 the workers are experienced and skilled, which they 19 are, if we know these workers need these good jobs, 20 which certainly they do, if we know the power is 21 produced at low cost and is indispensable to our grid, which is true, if we know the contribution Pilgrim 22 23 makes to the state's economy are immeasurable and 24 irreplaceable, which they are --. I lost my fourth 25 page. Then there are no reasons why the Pilgrim

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Nuclear Power Plant should be denied license renewal
 but rather a host of reasons why it should be allowed
 to continue being a key focal point of our energy and
 economic future.

5 And I want to say, you know, that this is a wonderful opportunity, this civic engagement, the 6 opportunity to speak in public about things that are so 7 8 important to us and for somebody that has represented workers for 30 years here in the Commonwealth of 9 Massachusetts, this is a good example, a good 10 relationship with the company, and the union and the 11 12 workers, doing good work for the community, so please 13 relicense the Pilgrim Nuclear Power Station for the benefit of the community. Thank you very much. 14

15 MR. CAMERON: Thank you. Thank you, Bob, 16 for those comments and also your remarks about the 17 meeting.

And we are going to go to Gary, Gary Sullivan. And Gary, why don't you just come right up here, thank you.

21 MR. SULLIVAN: Thank you. I'll wait until 22 I get to the mic before I say anything. I have no idea 23 what that guy was saying on his way up there, but let 24 me just thank him for taking all of my speech, 25 President Haynes.

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My name is Gary Sullivan, I represent the workers at Pilgrim Nuclear Power Plant, I'm very proud of those workers. I'm going to be very brief here.

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In my opinion, this is a no-brainer, jobs 4 are so important. We represent not only the workers at 5 Pilgrim Power Station, we represent workers at fossil 6 plants up in Cambridge, up in Everett, in South Boston, 7 in Charlestown, in Weymouth and I could tell you the 8 training that the people receive down at Pilgrim to run 9 that plant is second to none, I have never seen 10 anything like it. 11

12 I can also tell you that the majority of 13 my members that work at that plant live around the 14 plant, which says something. They are proud of what 15 they do there and they feel completely safe with themselves and their family, that is guite a statement. 16 Over 85 percent of them live in Plymouth and Barnstable 17 18 County. Now it was spoken earlier about the energy 19 situation, especially here in the Northeast, and I can 20 tell you that we are, we are very close to being in 21 crisis here in the Northeast when it comes to power.

22 With the growth in demand of electricity 23 and the lack of generation, I think it would be not 24 only a disservice to the workers and the community that 25 would be hurt by this closing or non-renewal but it's a

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disservice as well to the energy grid and the fact that getting alternative energy sources like wind power. I mean if we are having trouble with wind power and new alternative sources, we cannot discard a source and a resource like Pilgrim Nuclear Power Station.

So I just want to say, in closing, I think 6 7 we have an obligation to our society and the fact that 8 this power is needed on the grid. I think we have an 9 obligation to the community that it serves and the fact 10 that the people that work there thrive in the 11 community. This plant exudes community involvement, I 12 mean you cannot get a better example of how a business 13 is helping a community.

14 So I hope I wasn't too long, that's all I 15 want to say. Thank you for your time and thank you for 16 caring enough to be here for this issue.

17MR. CAMERON: Thank you. Thank you very18much, Gary.

19And we are going to go to Joyce, Joyce20McMahon, next.

21 MS. MCMAHON: Good evening. My name is 22 Joyce McMahon, I am the Director of Communications for 23 the Massachusetts Affordable Reliable Electricity 24 Alliance, Mass AREA for short.

25 First, let me thank you for taking this

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opportunity to address the commission, we do appreciate
your time. Second, I would like to tell you a bit
about Mass AREA and why we felt it was important to be
here. Mass AREA is a diverse, state-wide group
comprised of more than 65 labor, trade associations,
businesses, including Entergy, educators, scientists,
advocates and community leaders.

Earlier today, we heard from some other 8 Mass AREA members, which included the South Shore 9 10 Chamber of Commerce and Massachusetts Associated 11 Industries and tonight we heard from some of our labor 12 groups. As a group, we are committed to finding clean, 13 low cost and reliable electricity solutions that 14 benefit all of Massachusetts, it is an urgent public 15 policy challenge. We came together one year ago after several warnings were issued by the Federal Energy 16 Regulatory Commission, ISO New England and others that 17 18 energy supplies will be insufficient to meet peak 19 demand as early as 2008 and that energy prices are 20 causing hardship for the region's businesses and 21 residents, especially the most vulnerable such as the 22 elderly and low income populations.

23 While Mass AREA's mission is brought in 24 focus to include new electric generation in the form of 25 renewable energy resources, improving the transmission

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infrastructure, developing new natural gas supplies and 1 2 encouraging energy efficiency, Mass AREA and its members fully support a license extension for the 3 Pilgrim Nuclear Power Plant. On a typical day, Pilgrim 4 station provides seven to nine percent of the 5 Commonwealth's electricity. Without it, Massachusetts 6 7 and the region as a whole could face power supply shortages, including rolling blackouts, a lot sooner 8 9 than predicted.

Perhaps one of the most important issues 10 that led Mass AREA to support a license extension for 11 12 Pilgrim is the fact that the plant operates safely and continuously earns the NRC's highest safety rating of 13 We also know that NRC staffers are on-site at 14 green. 15 the plant each and every day overseeing operations and 16 helping to maintain a safe and secure environment. The 17 production and distribution of electricity, whatever the source, is inherently a challenging safety issue, 18 19 yet nuclear power has proven safe. In 50 years of commercial operations, there has never been a 20 21 radiological death at any U.S. nuclear plant.

22 Mass AREA and its members are also 23 comforted in the knowledge that Pilgrim's owners work 24 diligently with state and local emergency officials, 25 some of their programs include giving the local

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communities radio equipment so that they all operate on 1 2 the same frequency and conducting extensive training 3 sessions to make sure everyone is prepared in the event of an emergency, be it plant-specific or a natural 4 occurrence such as a hurricane or a blizzard. 5 The real danger is a scenario that Massachusetts will face if 6 7 the state does not have enough affordable and reliable 8 electricity.

9 Blackouts aren't simply an inconvenience 10 or a temporary loss of business, blackouts cause death 11 because people who are already frail and infirm can't 12 get the heat or cooling they need to sustain life. 13 High prices are a danger too as they cause folks to 14 curtail electricity use and again result in real life 15 safety concerns and possible harm.

Over the past several months, there have been a few proposals for new power plants but most are small, still the largest proposal, Cape Wind, faces significant opposition and the smaller units have not even begun the very long siting process. As such, it becomes even more vital that we maintain our current supply, including Pilgrim.

23 Opponents of the Pilgrim Power Plant often 24 say we would be better off if the generator was 25 decommissioned. However, the baseload power that would

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1 replace Pilgrim would most likely come from sources 2 that are more expensive, far more polluting or both. 3 At this time, wind and other renewable energy technologies simply cannot generate the massive 4 5 baseload power that would be needed were Pilgrim to 6 cease operations. Moreover, the electricity that Pilgrim supplies is created without generating any 7 8 greenhouse gas emissions and therefore it does not 9 contribute to global warming.

10 Pilgrim also mitigates the production of 11 hundreds of tons of sulfur dioxide and nitrogen oxides, 12 chemicals which are harmful to human health, especially 13 among children and the elderly, these health and environmental benefits alone are enough argument for 14 15 renewing Pilgrim's license to produce power. From an economic standpoint, since the owners of the plant sell 16 17 their power through long-term contracts and not on the 18 volatile short-term market, the power produced at 19 Pilgrim is much lower cost than the regional average.

20 Massachusetts ranks fourth in the nation 21 in terms of highest electricity costs, couple that with 22 our high housing and health care costs and it becomes 23 even more important to maintain Pilgrim's very 24 reliable, low cost electricity so that we don't 25 continue to have an exitus of residents and businesses

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from our state who can no longer afford to live or work here.

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Speaking of work, Pilgrim is also an 3 important source of jobs, it has more than 700 4 5 permanent full-time employees, most of whom live in 6 Plymouth and the surrounding communities, indeed 7 Pilgrim supports the local economy to the tune of \$135 million annually in local economic activity. 8 Though the draft environmental impact statement noted a 9 10 moderate socioeconomic impact should the plant cease 11 operations, we believe those who would lose their jobs would face large economic and financial loss. 12

13 In summary, Mass AREA has weighed all of 14 the environmental, economic and energy supply traits of Pilgrim, particularly its long record of safety, and 15 16 concluded that the Pilgrim Nuclear Power Plant is vital 17 to the region, state and local community for three 18 reasons. First, its environmentally sound operations; 19 second, its economic contribution to the local 20 community through the provision of jobs and purchase of goods and services; and third, its provision of 21 22 reliable, low cost electricity. Mass AREA encourages 23 the NRC to grant Entergy's Pilgrim station an extension 24 of its license so that it can continue to safely 25 operate for an additional 20 years.

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1 Further, we urge the Atomic Safety and Licensing Board to consider the Pilgrim related matters 2 3 before it as quickly and expediently as possible while the license renewal process takes its natural pace. 4 5 Again, thank you for the opportunity to 6 speak with you tonight. 7 MR. CAMERON: Thank you very much, Joyce, and thank you again. 8 9 And we are going to go to Mary Lampert, at 10 this point. 11 MS. LAMPERT: Yes. The NRC staff improperly concluded the cumulative impacts would be 12 13 small, the analysis was improper for the following 14 reasons. First, they ignored or misinterpreted new and 15 significant information pertaining to Pilgrim that has 16 occurred since the generic environmental impact statement was written in 1996. For example, the health 17 impact was determined to be small because they 18 19 misinterpreted that National Academy's BEIR 7 by saying 20 the recent report was very, didn't differ, differed 21 very little from the previous. 22 In fact, it stated that the incidents of 23 cancer would be a third higher than previously thought, that women were 37.5 percent more likely to get cancer, 24 25 that workers exposed to the allowable maximum dose, one

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1 in four would get cancer. Also, they ignored in the 2 draft the continued pattern of increased 3 radiation-linked diseases. A look at the cancer registry by the former founder and Director of the 4 5 Massachusetts Cancer Registry and a professor at Boston University has seen a continued increase, elevated 6 7 levels, of thyroid cancer, leukemia, multiple myeloma, 8 prostate, to name a few.

9 They also misinterpreted the Southeastern Massachusetts Health Study, the state study that found 10 a fourfold increase in adult leukemia. 11 And I 12 understand they now appreciate that they misquoted or 13 misunderstood and will be going back to DPH, the 14 authors of that study and the assistant commission have 15 held, have stated equivocally, and I will include their 16 e-mails and correspondence in my written testimony, 17 that they stand behind that study.

The second reason that the draft found 18 19 small impacts results from incorrectly assuming the current NRC regulations, many of which are written in 20 the 1970s are, a, they are being met by the licensee, 21 22 and that these regulations themselves reflect current realities and are indeed protective of public health 23 24 and safety, so they more or less put us in a catch-22. 25 An example is that the draft found spent fuel that

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would be half again, as much generated over the relicensing period was of small impact because of the assumption that this stuff will have someplace to go.

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Even Ed McGaffigan, a Commissioner of the 4 NRC, said Monday the Yucca Mountain program is deeply 5 flawed and that folks better start looking someplace 6 Also, another example would be they are assuming 7 else. that the regulation that doesn't require monitoring 8 wells on-site unless the water is used for drinking is 9 satisfactory. Clearly it is not satisfactory and it 10 will not pick up leaks of contaminated water from 11 12 buried pipes and tanks, for example, and the topography of the land is such that leaks, if they are there from .13 either buried pipes or tank or from the waste that has 14 been buried on site and denied, goes into the bay. 15

16 Third, they regard the impact as small because they ignored the impact of spent fuel in 17 postulated accidents and they ignored terrorism. 18 There are two significant factors that require them, before 19 20 they move forward in this decision, to look at 21 terrorism and also to look at the impacts of spent fuel 22 in a postulated accident, one is the 9th Circuit Court 23 decision in California that was asked to address the question whether the NRC need consider terrorism on 24 25 licensing decisions under NEPA, they answered yes.

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This process is a significant licensing situation so, therefore, this is a factor that has to be looked at. The Supreme Court was asked by the licensee in California to review the case and they refused to do so, meaning they concurred.

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6 The second issue is involving spent fuel, 7 spent fuel has to be looked at under the section of 8 postulated accidents. If you look at the GEIS, the GEIS or whatever, it says, it describes in Section 5 9 explicitly environmental impacts of postulated 10 11 accidents, they define severe, they define accident and 12 they don't limit either to the reactor. They do this, however, in Section 6 which deals with exclusively 13 14 normal operations and that's where they say the spent 15 fuel doesn't have to be considered.

16 So, what does this mean? All the new information that we have about the dangers of spent  $17 \cdot$ 18 fuel storage at Pilgrim provided by the National 19 Academy of Sciences, indicating that the way the fuel 20 is stored at Pilgrim is among the most dangerous in the 21 country, an analysis has to be done on the lack of 22 security from an air attack, from water, land and then 23 an analysis of the various mitigations to decrease risk 24 such as a requiring a dense, a low density pool, 25 secured dry cask storage, what about reconfiguring the

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pool? What about alternative water, spray water systems? This has to be analyzed and put forward.

Because, which I find interesting, because 3 they avoided talking about spent fuel, avoided talking 4 5 about terrorism, this helps explain their conclusion that these alternative sources of energy, such as wind, 6 7 solar, gas, etcetera, would have a greater impact, 8 would be more expensive, would be all these other 9 things. Clearly, if you look at, if you factor in security, if you factor in waste, if you factor in a 10 11 true analysis of consequence where the attorney 12 general, for example, a report to him indicated a 13 specific consequence analysis of a spent fuel accident of Pilgrim, that if 100 percent of the cesium 137 was 14 15. released, it would bring about \$488 billion in damage. 16 If ten percent of that were released, \$105 to \$175 17 billion. If 100 percent were released, which is likely 18 in a terrorist attack situation, 24,000 cancers, ten 19 percent, 8,000 cancers.

20 Now, seriously, who here is concerned 21 about a terrorist attacking a wind farm? So what if 22 they did? You would never have the consequences that 23 we have here. So, because nuclear has been described 24 as cost effective, it's because these true costs are 25 not put into play, it is the most heavily subsidized

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1 industry. If you describe it as safe, as former 2 speakers had, it's because you are not looking at what 3 the consequences of either a reactor accident or of a spent fuel accident, God forbid, would be. And if you 4 5 are looking at is as safe, I think I've already covered that. 6 And so, by continuing to ignore the 7 8 realities, what we are doing is depriving ourselves in 9 the future of a cleaner, safer and cheaper source of 10 energy for ourselves and for the generations down the 11 pipe. 12 Thank you. 13 Thank you very much, Mary, MR. CAMERON: 14 thank you. 15 Bill Harris? 16 MR. HARRIS: Good evening. I want to talk 17 about the economic impact of Plymouth station. My name is Bill Harris, I'm from Duxbury. I'm a local business 18 19 owner, I'm also a concerned citizen. 20 I support relicensing of Plymouth station, 21 nuclear power is the only viable long-term solution to 22 our energy needs. It's cost effective, it's reliable, 23 it's clean. Plymouth station is one of the largest local employers, it's one of the largest local 24 industries, the majority of Plymouth station employees 25

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live in the county. In addition to protecting land,
 making sizable charitable donations to local
 nonprofits, Entergy and Entergy employees pay taxes,
 taxes and fees that go to the local operating budget,
 the local schools, the local police and fire.

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Payroll at Entergy or payroll at the station is \$55 million between permanent employees and contractors, that's \$55 million injected into the local and surrounding economy, that's \$55 million going into local shops, local restaurants and most important, our local housing market. Plymouth station is a valuable part of the local and surrounding community, I support the relicensing of Plymouth station.

MR. CAMERON: Thanks a lot. Thanks, Bill.
How about Brian? Brian Thurber? Brian?
MR. THURBER: Good evening. My name is

17 Brian Thurber and I work as the energy coordinator for Clean Water Action. Clean Water Action is a statewide 18 19 and national environmental public health advocacy 20 organization with roughly 33,000 members in 21 Massachusetts. Thank you to the commission for the 22 opportunity to provide comment on the draft 23 environmental impact statement, my comments will be 24 extremely brief. We strongly support the efforts and comments of Pilgrim Watch and the Office of the 25

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Attorney General of Massachusetts, among other groups
 opposed to relicensing of the Pilgrim Nuclear Power
 Plant.

We concur with conclusions that the draft 4 5 environmental impact statement ignores new and significant information and relies on incorrect 6 assumptions about NRC regulations, as they relate to 7 8 environmental and public health impacts. The Pilgrim 9 plant suffers from the same persistent problems of 10 safety, security and storage as the nuclear industry in 11 general.

Even within the narrow scope of this 12 13 review of the impacts of relicensure, there are 14 significant impacts that should be grounds for denying 15 the extension. Daily radiation releases, the vast 16 amounts of radioactive waste stored indefinitely on-site at the plant, damaged fisheries and the risk of 17 a terrorist attack are just some of the compelling 18 19 reasons for letting the plant be decommissioned at the end of its planned life span in 2012. 20

21 And just specifically regarding the 22 comment about global warming that I believe Joyce 23 McMahon made earlier, I just want to point out that, 24 you know, studies have shown that the life cycle of 25 creating electricity from a nuclear power plant is

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actually greenhouse gas intensive because you include the fuel processing.

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3 And then also I just want to comment that I was surprised to see the broad-brushed conclusion 4 5 that alternatives to relicensure have moderate to large impacts necessarily, I mean that's obvious of course 6 7 with fossil fuel plants but with alternatives, 8 including renewables but especially efficiency and 9 conservation, it's very hard to argue that the impacts 10 would be anywhere close to large in terms of negative 11 environmental and health impacts and, when you are 1.2 talking about cost effective, I mean that's obviously 13 the way to go.

14 Given the many unanswered or inadequately 15 answered, inadequately answered concerns about the 16 environmental and public health impacts of extending the life of this plant, we respectfully ask that the 17 18 commission deny the relicensing of the nuclear power We strongly believe that this plant does not 19 plant. 20 deserve another 20 years of operation and the South 21 Shore and the rest of Massachusetts definitely does not deserve another 20 years of the impacts from this 22 23 plant.

Thank you.

25 MR. CAMERON: Thank you, Brian.

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1Our next three speakers are Michael2Scherer, Richard Rothstein and Bill Stone. And,3Michael?

4 MR. SCHERER: Good evening. My name is 5 Michael Scherer, I am a fish biologist and I was, until 6 about a year ago, the President of Marine Research down 7 in Falmouth.

8 About a year ago, Marine Research was 9 acquired by a much larger environmental consulting 10 company, Normandeau Associates, and I'm now a vice 11 president of that company. I've been working on 12 fisheries issues at Pilgrim station for most of my 13 professional career which has spanned about 32 years, 14 so I can appreciate the amount of material that needed 15 to be gone through to prepare the EIS.

16 I will prepare detailed comments, but I 17 wanted to offer a couple of short ones tonight and they 18 concern the moderate finding that the plant would have 19 a moderate, relicensing could have a moderate impact on 20 the Winter Flounder population and also on the smelt 21 population. The moderate impact finding on Winter 22 Flounder was based largely on what's called the 23 equivalent adult model which takes numbers of eggs and larvae that pass through the plant and predicts how 24 25 many adults would, could result from those based on

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many assumptions on their mortality rate. It's a screening tool and it's not designed to estimate mortality rates.

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In 2000, 2002 and 2004 I was involved in 4 5 what we call a larval transport study designed to 6 measure how many Winter Flounder actually flow past the station in a typical spawning season, and based on that 7 8 study, we estimated that much less than one percent of 9 the Winter Flounder larvae passing the station are actually entrained, so I would urge you to focus on 10 11 that more than the equivalent adult model.

12 With regard to Rainbow Smelt, the moderate 13 finding was based on numbers impinged, which average 14 about roughly 1,500 a year, and all of those fish were 15 attributed to the Jones Rives. There are approximately 21 Rainbow Smelt runs between Cape Cod and Boston of 16 17 varying sizes and, since Rainbow Smelt is a coastal 18 species, it seems unreasonable to assume that all of 19 them come from that one system.

Thank you.

MR. CAMERON: Thank you very much,
Michael. And Richard, Richard Rothstein?
MR. ROTHSTEIN: Good evening. I'm Rich
Rothstein, I'm a Plymouth resident and I also am a
member of the Town of Plymouth Nuclear Matters Advisory

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Committee, although tonight I'll be speaking on my own behalf.

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And you've heard comments pro and con about the relicensing and my objective in joining the committee two years ago was to try to ensure that whatever decisions are rendered would be based on good science and engineering, not hearsay, rumors, innuendos, etcetera.

I'm a board certified consulting 9 10 meteorologist and have been working in the 11 environmental consulting profession for the past 35 12 years, was heavily involved with the design, licensing 13 and operation of nuclear power plants domestically and internationally in the 1970s and became heavily 14 15 involved with nuclear emergency preparedness planning 16 programs following Three Mile Island in the early, during the early 1980s time frame. 17

18 I'm going to limit my comments tonight 19 briefly just to the adequacy of meteorological 20 databases and models that were used for the off-site 21 consequence analysis that was discussed in Chapter 5 of 22 the supplement EIS. You'll note that in the 23 appendices, that Appendix A, I believe, that contained 24 comments from the scoping meeting, public scoping 25 meeting, that took place last summer, there were a

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number of questions and issues raised about the adequacy of the MACCS II software code that was used for doing the air quality analyses, meteorological analyses for use in the studies.

5 And I guess the response to those comments indicated that this would be addressed or discussed in 6 Chapter 5, although I didn't see any simple or 7 8 extensive discussion in Chapter 5, it just gave the 9 results, so I would like to see Chapter 5 or somewhere 10 in the appendices in the SEIS give a more in depth 11 discussion of justifying the use of that type of code 12 for purposes of the modeling and dose calculations for 13 the off-site consequence analysis that went into the 14cost/benefit studies.

15 Now I know some of the commenters had 16 referred to, and I'm not going to get too technically 17 jargonny here, but Class A and Class B air quality 18 dispersion models, and these are modeling concepts that 19 the NRC developed back in the `70s and `80s time frame. 20 I'll just say that the MACCS II code is more like a 21 Class A model, very simplistic, assumes straight winds, 22 any given hour, and can be applied pretty quickly, and 23 the Class type B models were never really fully 24 implemented for use because they are quite cumbersome, 25 expensive numerical models, needed a mainframe computer

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## probably about half the size of this room.

2 The good news is that, since the early 1980s, that modeling techniques have been advanced and 3 models are a little simpler to apply, you can use some 4 5 of these complex models now, variable trajectory wind . flow models on a PC. An example of these types of 6 models can be found in 40 CFR, Part 51, Appendix W, 7 8 that's the EPA's guideline and air guality models; and 9 an example of a model that can be found there is the Cal-Puf model which can be applied for shoreline 10 complex wind flow environments, such as those that 11 12 exist in the Pilgrim region.

13 And I realize this is not part of nuclear 14 emergency preparedness planning, in terms of the 15 relicensing, but those kinds of models can also be 16 applied and adapted for use for operational studies and accident analysis studies, including the SAMA type of 17 18 studies too. And I brought up that model in particular 19 because the NRC's contract, Earth Tech, was the, some 20 of my colleagues who had worked at Earth Tech were 21 involved with the development of that Cal-Puf model, so 22 I know the folks from Earth Tech know what I'm talking 23 about here.

I'd just like to close to say that I would like to see NRC come up to speed, such as other federal

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1 agencies have had in the last decade or so, and use 2 realistic, accurate modeling techniques for a number of 3 different applications. And I think the sooner this is 4 done, the more credible and realistic the analyses will 5 be and that will only help promote and advance perhaps 6 the advent of even newer reactor technologies down the 7 road, so things don't get delayed due to questionable 8 analyses.

Thank you.

10MR. CAMERON: Thank you very much, Rich,11for those comments.

And Bill Stone?

13 MR. STONE: I'm a Plymouth resident and have been for 34 years, my wife and I and my children 14 15 live in the town, my grandchildren live in the town. 16 And as a resident of Plymouth, I know of no 17 environmental problems that Pilgrim has created, 18 according to what I've read from Mass DEP, the Federal 19 EPA or the NRC. I own a company that manages 20 approximately \$250 million worth of real estate, my 21 concerns, as far as the environment are concerned, is 22 whether or not we are going to be able to replace the 23 production, the electrical production, that comes if 24 Plymouth is allowed to go off-line.

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One of my concerns is that Massachusetts

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is continuing to slip as an economic powerhouse, our 1 young people are attracted to other areas. We do know 2 3 that they are leaving because there are lower costs for housing, for health care and for energy costs. 4 Businesses, such as mine and others, small and large, 5 remain adversely affected by their monthly electric 6 7 bills. As a number of you are aware, we had deregulation in Massachusetts approximately six years 8 ago and our firm has, for example, already taken 9 advantage of every energy efficient program and product 10 11 available for properties that we manage such as dialysis centers, women's health centers, breast care 12 facilities, sewerage treatment plants and other 13 residential properties that we manage. 14

A number of businesses in Massachusetts, 15 16 as we know and have enjoyed, have been engaged in 17 research and development. We also have to think about the simple things, such as how do our supermarkets keep 18 our food from spoiling as far as freezers are 19 concerned, which run 24 hours a day, all of us enjoy 20 going to the ATM, getting money out 24 hours a day, 21 these things have to be run on electricity. We do have 22 23 a number of hospitals that were in contact, they have inordinately high electric bills and most of them are 24 25 operating, as we know, 24/7.

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1 : All of us on the South Shore have enjoyed 2 our way of life and I think we have to look at that as actually a result of cheap energy. 3 Deregulation happened for business in 2000. In 2006, I've looked at 4 my energy bills, as a businessman, and I'm sorry to say 5 that I've watched, as I pay my bill to National Grid, 6 7 that my kilowatt per hour cost has gone from 6 to 7 cents per kilowatt hour, to 2006, it's gone as high as 8 9 12 cents per kilowatt hour and, looking at the month of January, it's gone from 12 cents per kilowatt hour to 10 11 13.82 cents per kilowatt hour, that's a 17 percent 12 increase this month.

Now none of us probably should be alarmed, 13 but what are we going to do when Pilgrim is off-line? 14 15 As we have heard and as we know, we have had problems 16 approving the wind energy program in the, off the coast 17 and I look at Pilgrim as a plant that actually produces electricity at a lower kilowatt hour cost to us than a 18 number of other alternatives. We cannot even approve a 19 20 wind energy program when the Dutch have been using it 21 for 800 years, we really have a problem and the problem 22 is that we need to get beyond ourselves and we have to 23 look at a situation where we have a reasonable cost of 24 producing electricity and we have to be honest.

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The most significant accomplishment in

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1 Massachusetts, I'm sorry to say, in the last year, is young Joe Kennedy appearing on television thanking the, 2 3 if you will, Communist leader of Venezuela, Hugo Chavez, for giving us free oil and lower cost oil to 4 5 give to our poor and our elderly. I think that we 6 really have a problem if that's one of our most 7 significant energy accomplishments in Massachusetts. Ι do look at it as, and I've listened to a number of 8 people, Pilgrim has produced jobs, the people that work 9 10 at Pilgrim are our neighbors, we have been living with them for 35 years, there has been no issues. 11 We do 12 have cost effective power, they live beside us, what's 13 the problem?

14And my greatest concern is that we in the 15 United States continue to slide in comparison to other 16 countries. We are looking at and we know from the Wall 17 Street Journal that the Chinese are building 80 nuclear 18 power plants, the French are building 20. I would 19 rather have my future depend on the United States 20 Nuclear Regulatory Commission than thinking about the Republic of Korea or thinking about a third world 21 22 country developing nuclear power. I know the Nuclear 23 Regulatory Commission has been criticized, I'm sorry 24 for that, but obviously it's a great country and we can 25 all disagree, but I think we all do finally agree that

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## it is the best country around.

The people who built Pilgrim have done a 2 better job, for example, than the Russians. The people 3 who maintain Pilgrim have done a better job than 4 5 anywhere else, I think we have to recognize it. Τ think we need to keep our children near us in 6 Massachusetts, our grandchildren near us, and we now 7 8 are dealing with the slow down, if you will, on the redevelopment of power plants. 9 I am concerned about the workers who do work at the plant, we do have 400 or 10 11 500 families, I would be very sorry to see them go. And I think we need to deal with the

12 13 realization in fact of what are we going to do in 2012 when we have rolling brownouts, when we have them 14 adversely effect hospitals, nursing homes, dialysis 15 centers, and places where we buy our food and live our 16 lives? We continue to slip because our costs for 17 housing, health care and energy are not being 18 replenished, we have to look at our situation 19 20 realistically. Over 100 years ago, we all dammed up 21 our rivers and that was a pretty big economic and 22 environmental impact because we needed to create power 23 to create jobs to run our mills, our manufacturing 24 plants, and that's a problem that hasn't really hurt us either. 25

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1 I think we are dealing with obvious 2 technological advancements, we are dealing with people 3 who care about how the energy is produced, who live beside the plant, who live in our neighborhoods and I 4 5 think we need to recognize that Pilgrim should be 6 relicensed. Thank you. 7 MR. CAMERON: Thank you very much, Bill. Our next speaker is Kevin, Kevin Craig? 8 9 MR. CRAIG: Thank you to the NRC for the 10 opportunity to talk tonight, I'm going to try to limit 11 my comments to what the NRC has done, what the staff 12 have done specifically about the generic environmental 13 impact statement because I don't think that this is an 14 issue of whether the plant should be open or closed in the future, I think it's an issue of whether this 15 16 statement has been adequately prepared, and whether all 17 the issues have been adequately studied and whether 18 there should be additional work done in terms of 19 protecting the plant, so let's try to keep it at that 20 level.

I don't get this thing that's repeated often in the study which is there is no new information. It's repeated in several sections that specifically concern me because I see new information and the two sections of the report where I don't see

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1 acknowledgement of new and significant information that 2 concern me is, one, the section that deals with the 3 environmental impact of the fuel cycle's radioactive waste and the second section is the environmental 4 impact postulated accidents. There are fixable issues 5 here, even given the new information that I believe 6 exists, but what the NRC needs to do, I believe, is 7 8 expose these issues and then force resolution of the 9 issues.

10 And I believe that these issues are related to the aging process because they get worse as 11 12 time goes on, the more that the plant operates, the 13 worse they get. I mean one could make an argument that 14 these issues are related to the routine operation of 15 the plant, but a circuit board that's routinely 16 operating over a period of 20 years and as it heats, 17 and gets hotter, and more brittle and eventually will 18 break, something that happens in the spent fuel pool as 19 a result of 20 additional years of operation that could 20 increase the probability of an accident needs to be 21 addressed because then I call it an aging issue.

Now we might be splitting hairs in terms of the linguistics here, but here are the two issues, one issue, the environmental impact of the fuel cycle's radioactive waste. There has always been a question of

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what's the environmental impact of large amounts of stored radioactive waste as a result of Pilgrim's operation from the current license as well as the renewed license, and what I'm referring to is the vast amount of harmful waste that's produced, excluding the fuel, spent fuel waste and the fuel rods.

And the answer to this question has always 7 8 been that it's satisfactorily addressed in these kinds 9 of studies on a national level with scenarios that 10 deploy off-site storage. So we just get it out of 11 Pilgrim, off-site storage facilities and the 12 possibility down the road of a yet to be determined 13 Yucca Mountain Site, which we heard discussed earlier, but I think there is new and significant information 14 15 that hasn't been taken into account that sort of 16 nullifies these answers and these ways of sort of pushing the issues aside. 17

First, we heard earlier about Yucca 18 19 Mountain, it's not going to open as predicted for the 20 disposal of the waste and I believe somebody said that 21 one of the NRC commissioners is now acknowledging that. 22 I think that's pretty new information in my mind. Certainly, if it ever does open, it isn't going to open 23 24 as predicted, it's going to be a long period off which 25 means you are going to have more and more waste stored

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up and it's going to have to stay on-site, I believe.
Because of the second factor, this second piece of new
information which is that an announcement has been made
that there is going to be a closing of a key facility
where this radioactive waste is dumped, that's a
facility in South Carolina that's capable of taking
this waste.

8 This facility takes many classes of this 9 waste, I guess this waste is broken up into four or 10 five different classes, there is high level, there's 11 mixed waste, and this plant takes it all or most of it. And these GEISs require that the analysis that the NRC 12 13 accounts for the adverse impacts associated with this issue of radioactive waste and if no information is 14 15 discovered in the GEIS, this is my understanding of the 16 way this works, the generic environmental impact statement, then the issue is called settled, it's been 17 18 settled at the national level and we don't have to deal 19 with it here at Pilgrim.

But if new information comes forward and it applies specifically to Pilgrim, which is what I'm contending here is that we've got the closure of these facilities, that's going to affect Pilgrim because we are not going to have a place to put this, there is no plan B here, then the issue is a Pilgrim issue and

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either the NRC or Entergy should acknowledge it and deal with it for the residents.

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I'm a resident here. By the way, Kevin Craig, I'm sorry, I didn't introduce myself. Kevin Craig, resident in Duxbury. I'm a member of the Duxbury Nuclear Advisory Committee, but I'm here on behalf of my neighbors and the citizens of this area.

So if the issue is local, then it's going 8 9 to have to be assessed for obvious reasons and 10 mitigated in this Pilgrim SEIS, that's my feeling. Either way you look at it, national or local, the issue 11 12 has to be addressed and it wasn't, there was really no 13 mention of this information. Both NRC and Entergy in 14 this book kept stating that they are not aware of any 15 new information that would effect the Pilgrim 16 environment, I feel that this will effect the Pilgrim 17 environment. What's the impact of this new information 18 on this report? The primary impact of this information 19 is that Pilgrim needs now to assess how much waste is going to be on-site, with the assumption that there is 20 21 going to be a lack of off-site storage.

The residents need a plan B, I need to know that somebody has thought through this, not to say, oh, we'll fix it later, it'll come. There has got to be a place for safe storage of this waste at the

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site, I want to see a plan for it because this could happen. The plan and assessment need to be evaluated in this SEIS report, that's my feeling. Furthermore, the quantification of this issue needs to be addressed in terms of volumes and curies of radioactive isotypes that will be coming out of the plant as a result of decommissioning, even after 2032, if the license were extended.

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9 It's not just an issue for the next 20 10 years, in my feeling, when you put this SEIS report 11 together, you've got to think about what happens after 12 decommissioning, assuming that we don't have a third 13 renewal. The secondary impact of this new information on the SEIS report is that the quantities of 14 15 radioactive waste are now an attractive target, if they are on-site here, for terrorists who are set on 16 17 spreading dirty bomb contamination that's going to destroy the environment and harm the health of our 18 19 citizens, which is what this environmental impact 20 statement is all about.

So there is a whole host of issues and additional mitigations that need to be addressed from this increased risk and the severe impact of terrorists targeting a build up of radioactive waste on the site as a result of a lack of places to put it around the

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country because, a, Yucca Mountain isn't going to go on schedule, b, this facility in South Carolina that takes many classes of this waste is closing. I think it's closing in 2008, this is Barnwell, South Carolina.

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I hope I have my facts right but I'm sure, this is what your job, is to take my facts and then sift through them.

8 But I am happy to see that the NRC has 9 acknowledged something that Pilgrim admitted which is 10 that there is, with this radioactive waste, a "irreversible and irretrievable resource commitment 11 needed", that's as far as things went in this report or 12 13 in this application. The Pilgrim application for the 14 license renewal lists this commitment that's needed for 15 radioactive waste as simply, and I put this in quotes 16 too because it's right in the application, "land is required to dispose of spent nuclear fuel and low level 17 18 radioactive wastes". So this is the closest that the 19 applicant's environmental report and the NRC's draft 20 SEIS came to addressing this issue, which I think has new and significant information. It's very disturbing 21 22 to me that nobody has acknowledged it and made a plan 23 В.

The second issue, environmental impact of postulated accidents, that's Section 5, is that right?

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1 Thanks. This involves spent fuel and specifically the 2 above ground pool and, again, new and significant 3 information here, no mention of it anywhere. I'm just stunned, absolutely stunned. The issue is that, what 4 5 are the risks associated with a spent fuel pool 6 accident? And the answer to this question has always 7 been similar to the first one, that the issue has been 8 satisfactorily assessed on a national level with scenarios that assess the possibility of some leakage 9 from the spent fuel pool and, as well, the answer 10 11 always involves that there will be, there is some 12 normal amount of density of fuel in the pool and that a 13 leakage will result in a manageable scenario.

14 New information, in my opinion, new and 15 significant information never acknowledged in here, 16 number one, 9/11 event, the 9/11 event, plus discovery 17 of nuclear facility files on computers of fundamental 18 terrorist organizations changes everything for me. Ι 19 think it changes the probability of a, what's referred 20 to in the report as a postulated accident, it changes the scenario that's mapped out as a manageable pool 21 22 leakage to a pool drainage or, at best, the elimination 23 of circulation of the water in the pool which has, as 24 you'll see, as you'll hear, disastrous consequences. The national, just to back up to this 25

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business about fundamental terrorist organizations, and 1 2 I'm just not talking off the top of my head based on the headlines in the news, the National Commission on 3 Terrorist Organizations issued a 2004 staff paper 4 5 suggesting that al Qaeda initially included nuclear power plants among their expanded lists of targets, 6 aside from the World Trade Center, the Pentagon, 7 8 etcetera, for their 9/11 attacks. So this is a 9 national commission that was put together after 9/11 10 that stated this.

This new information, again, changes the 11 12 whole scenario here, it doesn't take a classified 13 intelligence report to figure out how determined individuals could cause these scenarios to take place 1415 right from our backyard, the Plymouth Municipal Airport 16 or another nonmonitored airstrip in the region. Ι think this is also new information. Again, it's come 17 18 since the GEIS was developed, it's come within just the 19 last few years and it gives us an opportunity to 20 reassess the possibility of a sabotage attempt as a 21 higher possibility or a higher probability than was 22 originally postulated when people went through these . 23 scenarios and said this is not an issue.

24 Prior to 9/11, the NRC had no way of sort. 25 of estimating the likelihood of some sort of sabotage

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at a nuclear facility. As a matter of fact, I'm going 1 2 to quote from a document, an NRC document, "there is no established method ... for quantitatively estimating 3 the likelihood of a sabotage event at a nuclear 4 5 facility". This is from a report from the NRC prior to 9/11, June, 2001, a briefing on spent fuel three months 6 7 prior to 9/11. Since then, again, new information. We have an attack, we have mention of nuclear facilities 8 in al Qaeda documents and I think immediately even a 9 statistician, who knows nothing about terrorism, says, 10 oh, we have a probability, we have some probability we 11 12 can estimate, so this is new information.

Second, new and significant information on 13 14 this issue of the spent fuel pool, the original GEIS 15 assessed the fuel pool accident probability and impact 16 or since the original GEIS assessed the probability and impact of spent fuel pool impact when it was assessed 17 as a leakage that can be managed, the Pilgrim, locally 18 here, fuel rod densities have been increasing 19 substantially due to the lack of off-site fuel rod 20 21 storage and a lack of an approved on-site cask storage plan. At the same time, there are credible scientific 22 23 reports, that are new and I think significant, that have been published that essentially state that above 24 25 ground spent fuel pools are the most dangerous method

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of storage and when they are tightly packed, the danger increases.

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3 So the tight packing is new, the reports that this is a danger and the most dangerous form are 4 5 new and the consequences of that packing, which I'll get to right here next, is also new. 6 In 2005, a National Academy of Science report to Congress, which 7 8 was a report that was sponsored by the NRC and the 9 Department of Homeland Security, described a scenario with the partial loss of pool water where the fuel rod 10 11 cladding or the casing of the fuel rod catches fire.

12 The first, this scenario was first 13 described years ago by Sandia National Laboratory which 14 is a very famous laboratory, so it's been described by 15 several scientists is my point here but very recently 16 by the NAS on behalf of the NRC and the Department of 17 Homeland Security in a report to Congress.

18 Other credible scientific reports found in the Journal of Science and Global Security, for 19 20 example, have new and significant information of a more 21 specific nature on this issue, they explain how a major 22 human and environmental disaster would result from the 23 overheating and burning of a protective fuel rod 24 cladding in a densely packed pool. They describe how 25 the fire could easily release, result in the release of

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massive amounts of radioactive product, cesium being the worst, and that, in its report that I referred to, to Congress, the estimate of cancer deaths from a typical scenario with a cesium release is from 2,000 to 6,000 deaths. I would say that's a significant impact. A full release would dwarf Chernobyl's

release, based on the amount of cesium at Pilgrim. 7 Ι 8 believe it's, our spent fuel pool at Pilgrim has 9 several times the amount of cesium that was in 10 existence at Chernobyl and released at Chernobyl. The Massachusetts Attorney General has a report, and I 11 12 think it was referred to by an earlier speaker, that 13 describes the consequences of such an accident at 14 Pilgrim, specific to Pilgrim, they are between, in these terms for somewhere between a 10 and 100 percent 15 release of the cesium. 16

17 So, if 10 percent is released or 100 18 percent is released, somewhere in that range, this is 19 the range of the consequences in that report for 20 Pilgrim. The cost would be somewhere between \$105 and 21 \$488 billion and the cancers would effect somewhere 22 between 8,000 and 24,000 people, that's significant. 23 What's the impact of this business of the spent fuel 24 pool and this new information on the SEIS report that 25 we are talking about here tonight? Well it would seem

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that this new information raises a red flag, and this information has come forward only in recent years and it's directly applicable to Pilgrim's densely packed spent fuel pool, and it's going to get worse with age, the packing gets more intense.

Both the applicant's environmental report 6 and the NRC's draft SEIS have stated there is no new 7 8 and significant information on spent fuel that might 9 impact the environment. There is mention at some 10 point, I think the previous speaker to me said that there was mention of something about the spent fuel 11 12 pool and how there could be mitigation measures using dry cask storage and the like but, right now, as it 13 14 begins to become packed, well prior to cask, dry cask 15 storage being implemented, it is an increasing danger, 16 the fire that we are referring to.

So it was also surprising to me that I found out from this report to Congress recently that Entergy has begun studying the pool fire scenarios and even they said there is no new and significant information on spent fuel.

So, summarizing again the second issue of the fuel pool, there is significant and new information, from my perspective, as follows, there is an increased probability of a spent fuel pool attack

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1 from the air, there's two very realistic scenarios that 2 are deployable and that hinge on weak points in the 3 building as well as local airstrip safety systems that 4 are inadequate, but I won't discuss those, they are 5 security issues.

Two, an increase in the density of the 6 7 pool's fuel rods, three, scientific reports that are 8 fairly recent where everybody is beginning to 9 acknowledge the severe human and environmental impact 10 posed by an accident in a more densely packed pool, 11 especially the above ground type of Pilgrim, I mean 12 that's what's really the problem here. These are 13 fixable problems, however, this is not a statement that we've got to shut the plant down tomorrow, these are 14 ' 15 fixable problems, but somebody has got to shine a spotlight on them and make sure that we start talking 16 about a plan B, a resolution of these problems. 17

So I urge you to consider this information for the sake of kids, and my neighbors and the citizens not just of Duxbury where I live, but Plymouth, and Kingston, and Marshfield and places 20 miles beyond where if there was a severe accident, people would be effected for hundreds of miles, actually.

Thank you.

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MR. CAMERON: Thank you, Kevin, for the

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## perspective on new information.

2 And I think we have one more, I guess we 3 don't, okay. We are going to finish up a little early, and I think there is an opportunity here, for those of 4 you who can do it, the opportunity for the NRC staff to 5 talk further with people, such as Rich Rothstein, Mary 6 Lampert, Michael Scherer, about environmental 7 8 information or Joyce McMahon and her colleagues, 9 Mr. Stone, about economic issues, and also for people 10 from the public to talk to the NRC staff and consultants, the people who have the white name tags 11 12 on.

We do have people here from many different 13 14 disciplines, including our Office of General Counsel. 15 You heard mention of the California 9th Circuit case, 16 I'm sure that, Susan Uttal here from our Office of 17 General Counsel would be glad to talk to you about implications of that. But I would just encourage you, 18 19 after we close the formal part of the meeting, to stay 20 a little bit longer and talk about these issues, and I 21 would thank you for your comments.

And following the ground rules, and I'm going to ask Rani Franovich, who is the chief of the environmental branch in license renewal, and a lot of these people work for Rani, to just close the meeting

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Rani?

out for us.

2 3 MS. FRANOVICH: Thank you, Chip. I just wanted to thank you all again for 4 5 coming our to our meeting, this part of our environmental review process where we solicit input 6 from the public is very important to us. We have 7 8 gotten some very good and very helpful comments today 9 and this evening, so thank you very much again. I also wanted to remind everyone that we will be accepting 10 comments until February 28th, and Alicia Williamson, 11 12 the environmental project manager, is the point of contact for submitting those comments. 13 14 The last thing I wanted to mention is that

15 when you registered outside here, you may have seen a 16 public meeting feedback form that the NRC uses to solicit feedback on how well we are doing in conducting 17 our meetings, if you have any ideas on how we can do 18 things different, do things better, please let us know, 19 20 we are interested in knowing how we can improve. You 21 can leave those comment forms on the table, or hand them to one of us with a white little name tag or you 22 23 can fold them up and send them in, postage is prepaid. And with that, thank you and have a good evening. 24 25 (Whereupon, at 9:08 p.m., the hearing

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