Nos. 12-1404; 12-1772

UNITED STATES COURT OF APPEALS
FOR THE FIRST CIRCUIT

COMMONWEALTH OF MASSACHUSETTS,
Petitioner,
v.
UNITED STATES; UNITED STATES NUCLEAR REGULATORY COMMISSION
Respondents,

ENTERGY NUCLEAR OPERATIONS, INC.;
ENTERGY NUCLEAR GENERATION COMPANY,
Intervenors.

ON PETITIONS FOR REVIEW OF ORDERS OF THE
U.S. NUCLEAR REGULATORY COMMISSION

REPLY BRIEF FOR PETITIONER COMMONWEALTH OF MASSACHUSETTS

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October 25, 2012

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INTRODUCTION

In defense of the Commission's decision to deny the Commonwealth's National Environmental Policy Act (NEPA) contention and to disregard the new and significant information in the Nuclear Regulatory Commission's (NRC) own Task Force report on the lessons learned from Fukushima, the NRC relies upon three primary arguments: 1) first, the NRC erroneously argues that even though the NRC's Task Force report presents new and significant *public safety* information under the Atomic Energy Act (AEA), the same information does not constitute new and significant *environmental* information which must be addressed under NEPA, NRC 50; 2) next the NRC asserts that the Commonwealth improperly claims that NRC contention admissibility standards are "irrelevant" to this case, NRC 41; and 3) lastly the NRC wrongly takes the position that the NRC "did not have 'sufficient information at this time' to believe that the Fukushima events would trigger significant changes in NRC's existing environmental analysis." NRC 44 – 45 (citing JA-I-28 – 32).

These arguments are without merit and do not excuse the NRC's NEPA and AEA violations in this case.

ARGUMENT

I. THE NRC'S ARGUMENT, RAISED FOR THE FIRST TIME ON APPEAL, THAT THE TASK FORCE'S AEA PUBLIC SAFETY RECOMMENDATIONS DO NOT CONSTITUTE NEW AND SIGNIFICANT ENVIRONMENTAL INFORMATION FOR NEPA PURPOSES IS LEGALLY ERRONEOUS.

A. The NRC's post hoc rationalizations on appeal cannot save the Commission's unlawful decision.

In its appeal before the Commission, the Commonwealth expressly argued that "the Task Force's findings on the need to enhance AEA safety mitigation also support the need to revise and upgrade mitigation associated with minimizing the environmental impacts of relicensing under NEPA." JA-III-2910. Yet in denying the Commonwealth's appeal, the Commission never even discussed its own Task Force report. The Commission never explained the NRC's inconsistency in relying upon the Task Force recommendations to issue AEA safety orders for Pilgrim and other U.S. nuclear plants, while rejecting the Commonwealth's NEPA contention supported by those same recommendations. On appeal, the NRC does not dispute that the Commission failed to address these issues. NRC 55. Instead, the Commission claims that the information from Fukushima was too "inchoate" to

support NEPA review, Addendum to Commonwealth Initial Brief (ADD-) 32, which is contradicted by the record. *Infra*.[1]

Now, for the first time on appeal, the NRC attempts to explain these omissions and inconsistencies in the Commission's decision by offering a rationale which the Commission itself never relied upon. The NRC claims that it need not address the Task Force recommendations as part of its non-discretionary NEPA obligation to consider new and significant information because the Task Force report is only relevant to AEA safety findings but is not *environmentally* 'significant' under NEPA. NRC 50 ("Massachusetts essentially ignores all potential differences between safety reviews and environmental-impact reviews."); Entergy 35.

Only now, on appeal, does the NRC transform its previous rationale for dismissing the Commonwealth's NEPA contention – that the agency does not yet have enough information to form any specific conclusions about the environmental implications of the Task Force Report for individual licensing decisions, *see* ADD-32, – to a new rationale that the NRC need *never* address the environmental implications of the Task Force Report in any individual licensing case even if they

[1] The Commission did note that '[i]n a supplemental filing, Massachusetts asserted that the July 2011 Near-Term Task Force Report presents new and significant information that further supports its new contention." ADD-17. However, in denying the Commonwealth's contention, the Commission never explained why that information was inadequate to support contention admissibility or a supplemental Environmental Impact Statement (EIS) for Pilgrim under NEPA.

are safety significant. NRC 50. But the Commission itself never adopted this position. *See* NRC 55.

The NRC's post hoc arguments speculating on what the Commission would have said had it addressed the Task Force recommendations cannot save an otherwise unlawful decision or belatedly provide a reasoned explanation for agency action. *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto Ins. Co*., 463 U.S. 29, 50 (1983)("courts may not accept appellate counsel's post hoc rationalizations for agency action"); *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 419 – 420 (1971)(post hoc rationalizations for agency decision are not sufficient to rebut an arbitrary and capricious challenge); *Dubois v. United States Dept. of Agric.*, 102 F.3d 1273, 1289 (1st Cir. 1996)(post hoc rationalizations cannot cure agency's violation of NEPA). The NRC's belated argument should be rejected.

B. Even if the Court elects to consider the NRC's AEA arguments, as a matter of law the Task Force's AEA safety findings also support and require the NRC to consider these findings under NEPA before relicensing the Pilgrim plant.

1. The NRC's AEA argument presents an issue of law to which NRC is not entitled deference.

In its opposition brief, the NRC concedes the material facts supporting the Commonwealth's NEPA and AEA claims: (a) the information from the NRC's own Task Force on the lessons learned from Fukushima is "new" information, NRC at 3; (b) this new information from the Task Force is of such significance as to compel the Commission to issue immediately effective AEA "safety orders implementing a few of the Task Force recommendations," NRC at 17 – 18; and (c) the Task Force recommendations provided substantial support for the Commonwealth's NEPA contention. NRC 56. Therefore, the only actual dispute between the parties is a legal dispute: whether, given the admitted AEA safety significance of the lessons learned from Fukushima to date as set out in the NRC's own Task Force report, NEPA also requires the NRC to consider the environmental significance of this same information in a public, supplemental Environmental Impact Statement (EIS) process for the Pilgrim nuclear power plant, before granting Pilgrim a license extension for an additional twenty years.[2]

Thus, the Court need not decide if the information in the Task Force report is new and significant because the NRC concedes that it is. And, given the parties' agreement on these pertinent, material facts, the NRC is not entitled to deference

[2] *See* Declaration of Gordon R. Thompson Addressing New and Significant Information Provided by the NRC's Near-Term Task Force Report on the Fukushima Accident, ADD-118 – 124 (e.g. at ADD-119: "The Task Force Report contains a substantial body of information that is new and significant in the context of the Pilgrim license extension proceeding.").

on this one remaining issue of law, which should be reviewed de novo by this Court, *Dubois v. U.S. Dept. of Agriculture*, 102 F. 3d at 1284 (1st Cir. 1996), with legal conclusions judged under a standard of reasonableness. *Sierra Club v. Marsh*, 769 F.2d 868, 873 (1st Cir. 1985).

2. The NRC's argument that AEA safety findings are irrelevant to environmental impact review under NEPA is erroneous as a matter of law and contrary to established precedent.

The NRC concedes that "the Task Force Report does reflect that Fukushima was a serious accident that may present lessons for nuclear safety regulation in the United States, and NRC orders reflect this by implementing some of the Task Force's recommendations." NRC 50. The NRC also recognizes that "the Commission was certainly cognizant that Massachusetts's new contention was, at least in part, prompted by the Task Force Report." NRC 56. Remarkably, however, the NRC now claims that, in denying the Commonwealth's contention, the Commission was not required to discuss the Task Force report because "Massachusetts essentially ignores all potential differences between [AEA] safety reviews and [NEPA] environmental-impact review . . ." NRC 50. The NRC then proceeds to discuss these alleged "differences" as a means to lead this Court into the technical weeds, where it need not go, because these asserted "differences" between NEPA and the AEA are not legally relevant to the legal question at hand:

whether the Task Force AEA safety findings must also be considered as part of the environmental review under NEPA for the Pilgrim nuclear power plant.[3]

As the Commonwealth previously noted, the public safety concerns under the AEA substantially overlap with NEPA's environmental protection review, and thus new and significant information regarding public safety concerns under the AEA necessarily also trigger environmental concerns which must be addressed under NEPA prior to relicensing the Pilgrim plant. 40 C.F.R. § 1508.27 (b)(2)("significance" of impacts under NEPA includes "[t]he degree to which the proposed action affects public health or safety"); *see also* 40 C.F.R. §1508.14 (the term "human environment" under NEPA "shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment.").[4]

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[3] For example, the NRC correctly notes that the Fukushima-related AEA mitigation measures to increase public safety, as ordered by the NRC in response to its Task Force report, do not require a cost benefit analysis and are imposed without regard to cost, while NEPA mitigation measures (Severe Accident Mitigation Measures or SAMAs) require a cost benefit analysis. *See* NRC at 17. This is true but is not relevant to this case. The NRC's assertion simply means that whether a mitigation measure is ultimately adopted depends on a different (cost benefit or cost not considered) standard of review – but says nothing about whether the information in the first instance should be addressed under both NEPA (environmental review) as well as the AEA (safety review). *See* JA-III-2766 - 2767 (Commonwealth addressing potential cost benefit of additional mitigation measures for Pilgrim).

[4] Thus a mitigation measure for Pilgrim which would not necessarily warrant implementation without regard to cost under the AEA, still could be ordered based upon a cost benefit analysis under NEPA. The NRC does not dispute this. NRC

The substantial overlap in concerns addressed by the AEA and by NEPA also is clearly recognized in established judicial precedent. As this Court has observed, "[t]he Commission is under a dual obligation: to pursue the objectives of the Atomic Energy Act and those of the National Environmental Policy Act. 'The two statutes and the regulations promulgated under each must be viewed in Para (sic) Materia.'" *Public Service Company of New Hampshire v. NRC*, 582 F.2d 77, 86 (1st Cir. 1978)(quoting *Citizens for Safe Power v. NRC*, 524 F.2d 1291(D.C. Cir. 1975); *see also Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719, 730 (3rd Cir. 1989)(noting the overlap in AEA and NEPA issues and indicating that both statutes must be satisfied to support licensing).

There simply is no rule, as alleged by the NRC, that safety issues relevant to the AEA are exempt from NEPA evaluation. Massachusetts Initial Brief (MIB) 34 n.26. As the D.C. Circuit observed:

> The Atomic Energy Act was passed years before broader environmental concerns prompted enactment of [NEPA]. Yet many of those same concerns permeated provisions of the first-mentioned legislation and the regulations promulgated in accordance with its mandate. To say that these must be regarded independently of the constantly increasing consciousness of environmental risks reflected

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10 ("Under NRC regulations, mitigation measures may be reasonable under NEPA even if they are not required for safety and adequate protection under the Atomic Energy Act."). *See also Union of Concerned Scientists v. NRC*, 824 F.2d 108, 119 – 120 (D.C. Cir. 1987)(AEA prohibits the NRC from considering cost in setting level of adequate protection, but NRC may consider cost in deciding whether to require additional safety requirements not necessary to provide adequate protection).

> in proceedings with reference to NEPA, would make for neither practicality nor sense. Nor can AEA requirements be viewed separate and apart from NEPA considerations.

Citizens for Safe Power v. NRC, at 1299.

In *Citizens for Safe Power*, the court found that it was sensible for the NRC to apply conclusions reached in an evidentiary hearing on environmental issues to the review of safety issues under the AEA. *Id.* Similarly, the Task Force's recommendations that NRC safety requirements should be upgraded, based upon the lessons learned from Fukushima, in order to provide an adequate level of protection to public health and safety must be evaluated for their environmental significance. The NRC's belated effort to justify the Commission's failure to address its own Task Force report based upon an alleged distinction between AEA and NEPA review does not exist in the law and should be rejected by the Court.[5]

[5] Entergy adds its own irrelevant argument that "no similar risk of subduction earthquake followed by a tsunami, as occurred at Fukushima, exists for Pilgrim." Entergy 36. Whether or not a tsunami presents a risk for Pilgrim or another nuclear plant located in the midwestern United States is not the issue. The Commission ordered the Task Force recommendations to apply to U.S. nuclear plants, regardless of geographic location or tsunami threat. NRC 17. Because it is the multiple system failures at Fukushima which exposed the inadequacy of the NRC's mitigation measures to reduce public safety and environmental risk at U.S. nuclear plants -- whether caused by tsunami, terrorist attack, or other means. *See Entergy Nuclear Generation Co*. (Pilgrim Nuclear Power Station), LBP-11-23, 74 N.R.C. __(Sept. 8, 2011)(Young J., concurring in part and dissenting in part)(slip op. at 3)(discussing how the severe accident at Fukushima is relevant to Severe Accident Mitigation Alternatives analysis under NEPA at Pilgrim), (ML11251A206).

II. BY DEMONSTRATING THAT THE TASK FORCE REPORT PRESENTS NEW AND SIGNIFICANT INFORMATION REQUIRING NEPA REVIEW, THE COMMONWEALTH SATISFIED NRC CONTENTION ADMISSIBILITY STANDARDS.

The NRC erroneously claims that the Commonwealth should have addressed each individual NRC contention admission standard in its initial brief and argues that it is the Commonwealth's position that "NEPA and Atomic Energy Act's 'hearing' requirement render longstanding NRC procedural [contention admission] requirements irrelevant or inapplicable." NRC 32; *see also* Entergy 41. The NRC completely misstates the Commonwealth's position.

Once the Commonwealth satisfied the new and significant information standard under NEPA – which then required the NRC to consider the information in a public supplemental EIS process -- the Commonwealth also met the NRC's contention admission standards. The NRC cannot unreasonably interpret or misapply its contention admission standards to evade its own independent legal obligation to comply with NEPA and the Commonwealth's hearing right under the Atomic Energy Act. *See New Jersey Environmental Federation v. NRC*, 645 F.3d 220, 233 (3d Cir. 2011) (NRC's reopen the record standard may be applied "so long as it is reasonable."); *Union of Concerned Scientists v. NRC*, 920 F.2d 50, 56 (D.C. Cir. 1990)(NRC rules cannot be misapplied to deny AEA hearing right).

Contrary to the NRC's argument, the Commonwealth made this same point in its initial brief. MIB at 40 (citing *Calvert Cliffs Coordinating Comm. v. AEC*, 449 F.2d 1109, 1115 (D.C. Cir. 1971)(the NRC cannot misapply its contention admission standards to create "heightened admissibility standards" inconsistent with NEPA or "as a means to avoid complying with NEPA.")); *see also Public Service Company of New Hampshire v. NRC*, 582 F.2d 77, 81 (1st Cir. 1978)(the NRC cannot excuse itself from compliance with NEPA "except when specifically excluded by statute or when existing law makes compliance with NEPA impossible.").[6]

Moreover, the NRC's contention admission standards, at least facially, and the events at Fukushima may be reasonably interpreted to support admission of the Commonwealth contention. *See* JA-III-2765 (citing 40 C.F.R. § 1502.9 (new information must be "significant," "relevant to the environmental concerns," and "bearing on the proposed action.")). As Pilgrim ASLB Judge Young found in a related proceeding:

> I would further find that information regarding the Fukushima accident clearly is 'significant,' as required by 10 C.F.R. § 2.326(a)(2)[Motion to Reopen standard], both as a matter of obvious fact, and with specific

[6] Indeed, based upon the new and significant information from Fukushima contained in the NRC's own Task Force report, the Commonwealth specifically argued in its Initial Brief that it had met the NRC's contention admissibility standards consistent with NRC precedent. *See* MIB at 39 – 40 n.29; *see also* Commonwealth of Massachusetts' Brief in Support of Appeal from LBP-11-35, JA-III-2918 – 2919.

> reference to the Pilgrim SAMA analysis, including those aspects of it that concern containment failure, offsite consequences, and the functioning and use of DTV.[7]

Thus once the Commonwealth presented information from the NRC's own Task Force report which satisfied NEPA's new and significant information standard, JA-III-2460 (Task Force report), necessarily the NRC was under a legal obligation to comply with NEPA and could not lawfully interpret its regulations to reject the Commonwealth's contention filings and evade NEPA review. As a matter of law, the NRC cannot require the Commonwealth to provide more.

III. THE NRC'S DECISION TO REJECT THE COMMONWEALTH'S CONTENTION AND BYPASS NEPA REVIEW OF ITS OWN TASK FORCE REPORT BECAUSE THE INFORMATION IS TOO "INCHOATE" AT THIS TIME DOES NOT MAKE SENSE AND IS ARBITRARY AND CAPRICIOUS.

Having adopted primary Task Force recommendations to issue immediately effective orders to upgrade public safety at Pilgrim and other U.S. nuclear plants, the Commission now cannot credibly claim that the lessons learned from Fukushima, as set out in the same Task Force report, are still too "inchoate" to

[7] JA-III-2922 (Commonwealth of Massachusetts' Brief in Support of Appeal from LBP-11-35)(quoting LBP-11-23, 73 N.R.C. at __, (slip op. of Marshall, J. concurring in part and dissenting in part at 3)(September 8, 2011)). Even Entergy concedes the facial "compatibility" of NEPA's new and significant information standard with the NRC's standard for contention admissibility. Entergy 42.

support NEPA review. NRC 44 – 45; *cf.* MIB 37 – 38. It is patently unreasonable to expect that the NRC would have adopted the Task Force safety recommendations, and directed Pilgrim and other U.S. nuclear plants across the country to comply with them, if the NRC considered itself to lack enough information to understand their importance.[8]

In the past, the Court has rejected similar efforts by the NRC to act inconsistently with its announced policies and to circumvent its obligations under NEPA.

> We find it difficult to reconcile the Commission's conclusion that, as a matter of law, the possibility of a terrorist attack on a nuclear facility is "remote and speculative," with its stated efforts to undertake a "top to bottom" security review against this same threat. Under the NRC's own formulation of the rule of reasonableness, it is required to make determinations that are consistent with its policy statements and procedures. Here, it appears as though the NRC is attempting, as a matter of policy, to insist on its preparedness and the seriousness with which it is responding to the post-September 11th terrorist threat, while concluding, as a matter of law, that all terrorist threats are "remote and highly speculative" for NEPA purposes.

[8] Neither of the cases cited by the NRC to support the proposition of prematurity are relevant to the instant case. *See* NRC at 45 (citing *Town of Winthrop v. FAA*, 535 F.3d 1, 4 (1st Cir. 2008)); *Village of Bensenville v. FAA*, 457 F.3d 52, 71(D.C. Cir. 2006). In both cases, the agency conducted some form of NEPA review on the information in dispute. The issue was whether additional review was required. Here, by contrast, the NRC has refused to conduct any NEPA analysis whatsoever of information it has found to be both new and significant.

San Luis Obispo Mothers for Peace v. NRC, 449 F.3d 1016, 1030-1(9th Cir. 2006) (rejecting NRC rationale for refusing to conduct a NEPA analysis which was inconsistent with agency policy pronouncements).

In a similar maneuver here, the NRC claims that, even while issuing immediately effective orders based upon the Task Force report, it is legally sufficient under NEPA for "the Commission [to] acknowledge[] that at some point, Fukushima-related information could conceivably alter NEPA findings…[which] would trigger NEPA obligations for licensing proceedings that are pending at that time." NRC 45 – 46. But, of course, except in the unfettered discretion of the NRC, those obligations would not apply to Pilgrim once the relicensing decision becomes final. The Court should not permit the NRC to evade NEPA and avoid an updated environmental impact review before granting the Pilgrim plant a twenty year license extension. *Commonwealth of Massachusetts v. NRC,* 522 F.3d 115, 127 (1st Cir. 2008).

IV. THE REMAINING ARGUMENTS BY THE NRC AND INTERVENOR ENTERGY DO NOT PROVIDE A LAWFUL DEFENSE TO THE COMMISSION'S NEPA AND AEA VIOLATIONS.

The remaining defenses offered by the NRC and Entergy are legally erroneous or are refuted by the record.

First, the NRC's argument, that the Commonwealth does not challenge the Commission's decision to reject the Commonwealth's request to suspend the Pilgrim relicensing proceeding, pending a decision on the Commonwealth's alternative request for a generic rulemaking on spent fuel pools, is without merit. NRC 42; Entergy 25. The Commonwealth repeatedly has argued before the agency and this Court that NEPA requires the NRC to complete its non-discretionary review of the lessons learned from Fukushima *before* it may lawfully grant a twenty year license extension for the Pilgrim plant, *see e.g.* MIB 5 citing *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989), whether the agency elects to conduct that review on a site specific basis or by generic rulemaking. MIB at 7 (citing *Baltimore Gas & Elec. Co. v. Natural Resources Defense Council*, 462 U.S. 87, 100 – 101 (1983)).

Moreover, the NRC's focus upon the Commission's discretionary standards regarding whether to suspend the Pilgrim relicensing proceeding is misplaced. *See* NRC at 44. The NRC has no discretion but to comply with NEPA. *Silva v. Romney*, 473 F.2d 287, 292 (1st Cir. 1973)(agency has a nondiscretionary duty to comply with NEPA).[9]

[9] In any event, the proposed rulemaking would relate only to a portion of the Commonwealth's NEPA claims, involving the generic issue of spent fuel pools, but would not address the evaluation of the increased risk of severe accidents at Pilgrim and the additional site specific Severe Accident Mitigation Alternatives

Second, the NRC makes the legally erroneous argument that the Commission was correct to reject the Commonwealth's AEA hearing request on its NEPA contention because "hearings *have already been held* in the Pilgrim renewal proceeding." NRC 46 (emphasis in original). However, the Atomic Energy Act requires the NRC to provide a hearing on all issues material to relicensing, including whether the Pilgrim application has adequately addressed new and significant information under NEPA. *Union of Concerned Scientists,* 735 F.2d 1437, 1439 D.C. Cir. 1984)(*UCS I*).[10]

Third, the NRC, inconsistently, claims that it correctly rejected the Commonwealth expert's "'direct experience' methodology," which relied upon the severe accidents at Three Mile Island, Chernobyl, and Fukushima, and led the expert to determine that the likelihood of a severe accident at Pilgrim is an order of magnitude (a factor of ten) higher than is estimated in Entergy's pre-Fukushima theoretical model (PRA), which predicted that an accident like Fukushima likely would not happen. NRC 25 – 26; *see* JA-II-1695. The NRC rejects the direct

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(SAMAs) requested by the Commonwealth under NEPA, which have already been rejected by the Commission. *See* MIB 6 (SAMA analysis is site specific).

[10] Entergy also argues that UCS I "does not confer an automatic right of intervention upon anyone." Entergy 43 (quoting *Union of Concerned Scientists v. NRC*, 920 F.2d 50, 55 (D.C. Cir. 1990)(*UCS II*)). This issue is not in dispute. Instead, *UCS II* affirms the holding in *UCS I* which supports the Commonwealth's right to a hearing in this case on its NEPA contention. *UCS II* at 54 ("We found [in *UCS I*] 'no basis in the statute or legislative history for NRC's position that Congress granted it discretion to eliminate from the hearing material issues in its licensing decision.").

experience methodology even though the NRC's own Task Force relied upon it to recommend immediate safety upgrades at Pilgrim and other U.S. nuclear plants. JA-III-2460 ("The Task Force believes, based upon its review of the information currently available from Japan and the current regulations, that the time has come for such change [to NRC safety standards]."). The direct experience of the severe accident at Three Mile Island similarly caused the NRC to reconsider its evaluation of risk at nuclear facilities: "[t]he 1979 accident at Three Mile Island substantially changed the character of NRC's analysis of severe accidents and its use of PRA [Probabilistic Risk Analysis]." JA-III-2419 (quoting NUREG-1150, Addendum to Commonwealth Reply Brief (ADD-II) at 1.).[11]

Yet regardless of this dispute with the Commonwealth's expert on the use of direct experience, the NRC independently is required by NEPA to undertake a supplemental EIS process for Pilgrim, based upon the information in its own Task Force report, as requested by the Commonwealth in its contention. ADD-118 – 124 (Commonwealth expert discussing significance of Task force report).

[11] The Commission also found that the Commonwealth's expert could not properly rely upon the direct experience of the severe accidents at Three Mile Island and Chernobyl, in combination with the severe accident at Fukushima, as direct experience events to test the validity of Entergy's theoretical model of risk because these events were too "old" and were untimely raised. NRC 39 n.13. Thus under the NRC's view, each "new" severe accident would be treated in isolation and each "old" severe accident disregarded in the licensing process. As the Commonwealth previously noted, this turns western scientific method on its head. JA-III-2895.

Finally, Entergy offers an argument to support the NRC's denial of the Commonwealth's contention, and refusal to conduct a public NEPA process, which the NRC itself does not make: that in evaluating the Commonwealth and opposition pleadings alone at the contention admission stage of this proceeding, the Pilgrim Atomic Safety and Licensing Board (ASLB) satisfied NEPA by performing "a textbook example of the 'hard look required by NEPA . . ." Entergy 32.

This argument is fatally flawed because the NRC itself contradicts it: the Commission acknowledges it has not yet completed its review of the lessons learned from Fukushima, MIB 35 ("Our review of the events at Fukushima Dai-ichi is ongoing."), and the Pilgrim ASLB similarly never claimed to have completed that review. MIB 21 (quoting the ASLB: "[T]he Near Term Task Force Report's suggestion that some severe accidents should be included in the design basis [for Pilgrim]…must await scientific investigation and its outcome."). *See also* MIB 32 n.25 (cases cited re: hard look review as requiring "careful scientific scrutiny"). The post hoc arguments of the non-agency Intervenor should be disregarded. Section I.A, *supra*.

CONCLUSION AND REQUEST FOR RELIEF

For the foregoing reasons, the Commonwealth respectfully requests this Court to reverse and remand CLI-12-06, and to vacate the Commission's Licensing Orders to grant a twenty year license extension for the Pilgrim nuclear power plant, with directions that the Commission consider and rule upon the Commonwealth's new and significant information in accordance with NEPA and the AEA, and apply those considerations and rulings to the individual Pilgrim relicensing proceeding, before making a final relicensing decision, subject to any further rulings by the Court.[12]

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October 25, 2012

[12] In the event the Court grants the Commonwealth's request to revoke the Pilgrim Licensing Orders, 10 C.F.R. § 2.109(b) provides that "the existing [initial] license will not be deemed to have expired until the application has been finally determined." ADD-II-3.

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Dated: October 25, 2012

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NUREG–1150
Vol. 1

Severe Accident Risks: An Assessment for Five U.S. Nuclear Power Plants

Final Summary Report

U.S. Nuclear Regulatory Commission

Office of Nuclear Regulatory Research

1. INTRODUCTION

1.1 Background

In 1975, the U.S. Nuclear Regulatory Commission (NRC) completed the first study of the probabilities and consequences of severe reactor accidents in commercial nuclear power plants—the Reactor Safety Study (RSS) (Ref. 1.1). This work for the first time used the techniques of probabilistic risk analysis (PRA) for the study of core meltdown accidents in two commercial nuclear power plants. The RSS indicated that the probabilities of such accidents were higher than previously believed but that the offsite consequences were significantly lower. The product of probability and consequence—a measure of the risk of severe accidents—was estimated to be quite low relative to other man-made and naturally occurring risks.

Following the completion of these first PRAs, the NRC initiated research programs to improve the staff's ability to assess the risks of severe accidents in light-water reactors. Development began on advanced methods for assessing the frequencies of accidents. Improved means for the collection and use of plant operational data were put into place, and advanced methods for assessing the impacts of human errors and other common-cause failures were developed. In addition, research was begun on key severe accident physical processes identified in the RSS, such as the interactions of molten core material with concrete.

In parallel, the NRC staff began to gradually introduce the use of PRA in its regulatory process. The importance to public risk of a spectrum of generic safety issues facing the staff was investigated and a list of higher priority issues developed (Ref. 1.2). Risk studies of other plant designs were begun (Ref. 1.3). However, such uses of PRA by the staff were significantly tempered by the peer review of the RSS, commonly known as the Lewis Committee report (Ref. 1.4), and the subsequent Commission policy guidance to the staff (Ref. 1.5).

The 1979 accident at Three Mile Island substantially changed the character of NRC's analysis of severe accidents and its use of PRA. Based on the comments and recommendations of both major investigations of this accident (the Kemeny and Rogovin studies (Refs. 1.6 and 1.7)), a substantial research program on severe accident phenomenology was planned and initiated (Refs. 1.8 and 1.9). This program included experimental and analytical studies of accident physical processes. Computer models were developed to simulate these processes. The Kemeny and Rogovin investigations also recommended that PRA be used more by the staff to complement its traditional, nonprobabilistic methods of analyzing nuclear plant safety. In addition, the Rogovin investigation recommended that NRC policy on severe accidents be reconsidered in two respects: the need to specifically consider more severe accidents (e.g., those involving multiple system failures) in the licensing process, and the need for probabilistic safety goals to help define the level of plant safety that was "safe enough."

By the mid-1980's, the technology for analyzing the physical processes of severe accidents had evolved to the point that a new computational model of severe accident physical processes had been developed—the Source Term Code Package—and subjected to peer review (Ref. 1.10). General procedures for performing PRAs were developed (Ref. 1.11), and a summary of PRA perspectives available at that time was published (Ref. 1.12). The Commission had developed and approved policy guidance on how severe accident risks were to be assessed by NRC (Ref. 1.13) as well as safety goals against which these risks could be measured (Ref. 1.14) and methods by which potential safety improvements could be evaluated (Ref. 1.15).

In 1988, the staff requested information on the assessment of severe accident vulnerabilities by each licensed nuclear power plant (Ref. 1.16). This "individual plant examination" could be done either with PRA or other approved means. (In response, virtually all licensees indicated that they intended to perform PRAs in their assessments.) The staff also developed its plans for integrating the reviews of these examinations with other severe accident-related activities by the staff and for coming to closure on severe accident issues on the set of operating nuclear power plants (Ref. 1.17).

One principal supporting element to the staff's severe accident closure process is the reassessment of the risks of such accidents, using the technology developed through the 1980's. This reassessment updates the first staff PRA—the Reactor Safety Study—and provides a "snapshot" (in time) of estimated plant risks in 1988 for five commercial nuclear power plants of different design. For this reassessment, the plants have been studied by teams of PRA specialists under contract to NRC (Refs. 1.18 through 1.31). This report,

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Protecting People and the Environment

§ 2.109 Effect of timely renewal application.

(a) Except for the renewal of an operating license for a nuclear power plant under 10 CFR 50.21(b) or 50.22, an early site permit under subpart A of part 52 of this chapter, a manufacturing license under subpart F of part 52 of this
chapter, or a combined license under subpart C of part 52 of this chapter, if at least 30 days before the expiration of
an existing license authorizing any activity of a continuing nature, the licensee files an application for a renewal or for a new license for the activity so authorized, the existing license will not be deemed to have expired until the application has been finally determined.

(b) If the licensee of a nuclear power plant licensed under 10 CFR 50.21(b) or 50.22 files a sufficient application for
renewal of either an operating license or a combined license at least 5 years before the expiration of the existing
license, the existing license will not be deemed to have expired until the application has been finally determined.

(c) If the holder of an early site permit licensed under subpart A of part 52 of this chapter files a sufficient application
for renewal under § 52.29 of this chapter at least 12 months before the expiration of the existing early site permit, the existing permit will not be deemed to have expired until the application has been finally determined.

(d) If the licensee of a manufacturing license under subpart F of part 52 of this chapter files a sufficient application for
renewal under § 52.177 of this chapter at least 12 months before the expiration of the existing license, the existing
license will not be deemed to have expired until the application has been finally determined.

[56 FR 64975, Dec. 13, 1991; 72 FR 49473, Aug. 28, 2007]

Page Last Reviewed/Updated Thursday, April 12, 2012