

June 13, 2007

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED
USNRC

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

June 14, 2007 (8:55am)

In the Matter of)
Pa'ina Hawaii, LLC)
Material License Application)
_____)

Docket No. 30-36974-ML
ASLBP No. 06-843-01-ML

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

INTERVENOR CONCERNED CITIZENS OF HONOLULU'S
RESPONSE TO THE NRC STAFF'S ANSWERS TO THE
QUESTIONS POSED IN THE LICENSING BOARD'S APRIL 30, 2007 ORDER

I. INTRODUCTION

Pursuant to the Atomic Safety and Licensing Board's ("Board's") June 6, 2007 order, intervenor Concerned Citizens of Honolulu responds to the Nuclear Regulatory Commission ("NRC") Staff's answers to the questions posed in the Board's April 30, 2007 order. As discussed in greater detail herein, to make a lawful decision on Pa'ina Hawaii, LLC's application for a license to place up to one million curies of Cobalt-60 at a location vulnerable to aviation accidents, tsunamis, hurricanes and earthquakes, the NRC must have adequate information to determine whether Pa'ina's proposed irradiator would be "adequate to protect health and minimize danger to life or property," as 10 C.F.R. § 30.33(a)(2) mandates. It cannot possibly answer that question without first evaluating the scenarios under which radiation exposure to the public beyond prescribed limits might occur, calculating the likelihood of such events, and comparing that likelihood to an established design basis threshold probability. See Private Fuel Storage, LLC (Independent Spent Fuel Storage Installation) ("PFS"), CLI-01-22, 54 NRC 255, 259 (2001) (facility must be designed to withstand "credible" accidents). The Staff likewise

must perform this analysis to comply with its obligation under the National Environmental Policy Act (“NEPA”) to take a “hard look” at the effects from proceeding with Pa‘ina’s proposed irradiator. Klamath-Siskiyou Wilderness Center v. Bureau of Land Management, 387 F.3d 989, 1001 (9th Cir. 2004).

II. CONCERNED CITIZENS’ RESPONSES

A. The Staff Ignores Its Obligation To Ensure Pa‘ina’s Proposed Irradiator Is Safe.

The first question the Board posed in its April 30, 2007 order was whether, in analyzing “the probability and consequences with respect to aircraft crashes, tsunamis, and hurricanes,” the Staff made a determination “that the risks associated with these events are acceptable taking into account the probability of the event’s occurrence.” 4/30/07 Order at 7. The Staff’s answer, in essence, alleges it does not have to make such a determination. 5/21/07 Staff Answers at 1-3. The Staff’s response ignores 10 C.F.R. § 30.33(a)(2), which precludes approval of Pa‘ina’s application unless the proposed irradiator is “adequate to protect health and minimize danger to life or property.” See also 10 C.F.R. § 36.13(a). If the Staff does not evaluate the likelihood that aviation accidents or natural disasters will result in radiation exposures above prescribed limits, it cannot possibly fulfill its obligation to ensure Pa‘ina’s irradiator is safe.

The absence from the regulations of siting requirements for irradiators does not, as the Staff suggests, relieve it of its duty to evaluate the facility’s safety from natural and human-induced disasters. 5/21/07 Staff Answers at 2-3. As the Board held in admitting Safety Contention #7, “the lack of a regulatory prohibition against siting an irradiator at an airport does not affirmatively establish that any airport location satisfies the general requirement of 10 C.F.R. § 30.33(a)(2) that an irradiator facility be ‘adequate to protect health and minimize danger to life or property.’” Pa‘ina Hawaii, LLC (Material License Application), LBP-06-12, 63 NRC 403,

419 (2006).¹ Likewise, the Staff must ensure the proposed irradiator's safety in the event of a tsunami, hurricane, or earthquake, even if there is no "regulatory provision specifically requiring an analysis of the probabilities and consequences of [natural disasters]." Id.

That different regulations and guidelines apply to independent spent fuel storage installations ("ISFSIs") and to irradiators does not, as the Staff argues, render PFS inapplicable. Under the Staff's logic, there would have been no need to determine the threshold probability for aviation accidents in PFS since, unlike the situation for nuclear reactors (for which the Standard Review Plan had "long ago" established a one-in-ten-million probability), no preexisting "agency guidance or regulation" defined "the threshold probability for a design basis event at an ISFSI." PFS, CLI-01-22, 54 NRC at 259-60. Rather than adopt the Staff's approach and deprive Part 72's safety-based standards of any meaning, the Commission in PFS affirmed that, "[a]s no law or regulation establishes the threshold probability for design basis accidents at an ISFSI, the Commission must select a standard it finds sufficiently protective." Id. at 263.²

Like the regulations at issue in PFS, the regulations that apply to Pa'ina's proposed irradiator require the Staff to evaluate the proposed facility and to reject Pa'ina's application if its facility would pose unacceptable risks to public health and safety. Compare 10 C.F.R. § 30.33(a)(2) with id. § 72.90. The Staff cannot perform that analysis without reference to a

¹ Notably, in admitting Safety Contention #7, the Board rejected the Staff's argument that Concerned Citizens had "fail[ed] to cite a specific regulatory provision requiring an analysis of aircraft crash probabilities and consequences." Id. The Board also noted that, in declining to impose a categorical prohibition on locating irradiators at airports, the Commission had not considered the type of facility Pa'ina proposes. Id.

² Concerned Citizens does not understand the Staff's claim the quoted language militates against establishing a threshold probability for irradiators. See 5/21/07 Staff Answers at 9. Clearly, the Commission did not interpret the lack of an applicable regulation or guidance establishing a threshold probability for ISFSIs as precluding the establishment of an appropriate standard in PFS. The situation here is "directly analogous," requiring the establishment of a threshold probability for irradiators before any decision on Pa'ina's application is rendered. Id.

threshold probability for design basis events at Pa'ina's irradiator.³ Since no law or regulation establishes that standard, this proceeding must establish a sufficiently protective one to ensure 10 C.F.R. § 30.33(a)(2) is satisfied. See 4/30/07 Board Order at 4 (noting "situation might be viewed as analogous to that for ISFSIs prior to consideration of the topic by the Licensing Board and the Commission").

In responding to the Board's second set of questions, the Staff conceded that, where "extraordinary and unique circumstances" exist, additional analysis is required to establish compliance with section 30.33(a)(2). 5/21/07 Staff Answers at 8.⁴ Concerned Citizens respectfully submits that Pa'ina's decision to site its irradiator in a location where the Staff acknowledges it runs a one-in-5,000 chance of being hit by an airplane each year (which translates to one-in-500 odds over the ten-year life of the requested license), within a tsunami evacuation zone and in an area threatened by hurricanes and earthquakes removes Pa'ina's proposed facility from the run-of-the-mill. See Final Topical Report on the Effects of Potential Natural Phenomena and Aviation Accidents at the Pa'ina Hawaii, LLC Irradiator Facility ("Final Topical Report") at 2-18 (ADAMS Accession No. ML071280833); see generally 2/9/07

³ Notably, in a subsequent answer, the Staff asserts it found a "lack of a credible release pathway [from aviation accidents and natural events involving Pa'ina's proposed irradiator] which would expose members of the public to doses in excess of the limits in Part 20." 5/21/07 Staff Answers at 7 (emphasis added). To determine what constitutes a "credible" accident, however, the Staff must first determine the likelihood such an accident will occur and compare that probability with the threshold probability for a design basis event involving the irradiator. PFS, CLI-01-22, 54 NRC at 259; see also id. at 259 n.10 (only aviation accidents with greater than one-in-ten-million chance considered credible for nuclear reactor). In the absence of a threshold probability, the Staff could not rationally determine whether a release scenario was credible.

⁴ The Staff's assumption that compliance with 10 C.F.R. Part 36 is generally adequate to "demonstrate compliance with 10 C.F.R. § 30.33(a)(2)," id., ignores 10 C.F.R. § 36.13(a), which expressly conditions approval of Pa'ina's application on the applicant "satisfy[ing] the general requirements specified in § 30.33 of this chapter and the requirements contained in this part." (Emphasis added). While compliance with Part 36 is necessary to secure an irradiator license, it is not sufficient. Section 30.33(a)(2) imposes an independent requirement that must be satisfied.

Concerned Citizens' Contentions Re: Draft Environmental Assessment and Draft Topical Report; cf. Pa'ina Hawaii, LLC (Material License Application), LBP-06-4, 63 NRC 99, 110-11 (2006) (concluding regulatory history of 10 C.F.R. § 51.22 "certainly does not support the view that the risks associated with the myriad possible locations for siting an irradiator were considered by the Commission in adopting the categorical exclusion" and noting "proposed location of the Pa'ina Hawaii irradiator is not immune from the hazards posed by natural disasters and potential aircraft crashes"). Establishment of a threshold probability for design basis accidents involving Pa'ina's proposed irradiator is necessary to determine whether the facility would be safe from these unusual threats and, thus, is eligible for licensing.

B. The Staff's Failure To Quantify The Likelihood Of Radiation Releases From Aviation Accidents And Natural Disasters And Compare That Likelihood To A Design Basis Threshold Probability Violates NEPA.

In responding to the Board's first set of questions, the Staff attempts to justify its failure to quantify the likelihood of adverse consequences resulting from aircraft crashes and natural disasters on the grounds that "the examination of probabilities in this case was for environmental purposes," not for "safety analyses." 5/21/07 Staff Answers at 4 (emphasis in original).⁵ Nothing in NEPA or its implementing regulations, however, authorizes the Staff to fail to quantify the likelihood of significant impacts associated with accidents involving Pa'ina's proposed irradiator, if quantifying potential impacts is possible. See San Luis Obispo Mothers for Peace v. Nuclear Regulatory Comm'n, 449 F.3d 1016, 1031-32 & n.9 (9th Cir. 2006), cert.

⁵ In light of the Staff's previous position the Draft Topical Report was a "Safety Topical Report" that it provided "an analysis of the probability of an aircraft crash at the proposed facility and discuss[ed] expected impacts from an aircraft crash," rendering Concerned Citizens' Safety Contention #7 moot, the Staff's current claim it never performed any safety analysis of aviation accidents is perplexing. 1/19/07 NRC Staff Response to Pa'ina's Motion To Dismiss Safety Contention #7 at 3 (emphasis added). If the Staff did not, in fact, perform such a safety analysis, then Safety Contention #7, which challenges its omission, is not moot.

denied sub nom, Pacific Gas & Elec. Co. v. San Luis Obispo Mothers for Peace, 127 S.Ct. 1124 (2007) (noting NRC can “conduct a low probability-high consequence analysis without quantifying the precise probability of risk,” but questioning “NRC’s assertion that a risk of terrorism cannot be quantified”). Rather, NEPA commands the Staff to take a “hard look at the effects from proceeding with [the proposed irradiator].” Klamath-Siskiyou Wilderness Center, 387 F.3d at 1001. “General statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided.” Id. at 994 (quoting Neighbors of Cuddy Mountain v. United States Forest Service, 137 F.3d 1372, 1380 (9th Cir 1998)). If it is possible to objectively quantify an impact, NEPA requires that the Staff do so. Id.

In this case, the Staff does not contend it could not perform a quantitative analysis of the probability and consequences of aviation accidents and natural phenomena involving Pa’ina’s proposed irradiator or apply a design basis threshold probability as it would for other types of nuclear facilities. On the contrary, the Staff began such a quantitative analysis for aviation accidents, applying the formula in NUREG-0800 to calculate the annual probability of an airplane striking Pa’ina’s facility, but inexplicably abandoned the effort when it came to analyzing the consequences. See Final Topical Report at 2-6 to 2-18.⁶ In light of NEPA’s requirement that the Staff “insure the professional integrity, including scientific integrity, of the discussions and analyses” in its environmental review, there is no excuse for the Staff’s refusal to employ accepted methodologies to analyze the likelihood of harmful radiation releases from Pa’ina’s proposed irradiator. 40 C.F.R. § 1502.24.

⁶ As discussed in Concerned Citizens’ Safety Contention #13, due to flaws in the data the Topical Report uses and the assumptions it makes, the report substantially underestimates the likelihood of an aviation accident involving the Pa’ina irradiator. There is, however, no dispute about the need for the Staff to quantify the risk of aviation accidents.

Moreover, the Staff's argument that, in conducting its NEPA analysis, it need not quantify the likelihood of adverse consequences from accidents at Pa'ina's proposed irradiator and compare that likelihood to a design basis threshold probability cannot be squared with the guidance for assessing "significance." NUREG-1748 provides that "[t]he evaluation of significance should be based on [several] considerations" including whether there are "undesirable public health or safety effects." NUREG-1748, "Environmental Review Guidance for Licensing Actions Associated with NMSS Programs," at 3-12 (July 2003) (emphasis added). Absent an analysis of design basis events involving Pa'ina's proposed irradiator and a determination whether the proposed facility can "be designed to withstand credible accidents without releasing excessive radiation," the Staff lacks any basis to determine the potential for "undesirable" public health or safety effects, the existence of which triggers the requirement to prepare an environmental impact statement ("EIS"). PFS, CLI-01-22, 54 NRC at 259; see also NUREG-1748 at 3-15 (EIS required if "there are possible significant impacts from the proposed action") (emphasis added).⁷

C. The Appropriate Threshold Probability For Pa'ina's Proposed Irradiator Must Be Protective Of Public Health And Safety.

In establishing the threshold probability for design basis accidents at an ISFSI, the Commission emphasized the importance of selecting a standard that is "sufficiently protective." PFS, CLI-01-22, 54 NRC at 263. In light of the regulatory mandate to ensure Pa'ina's proposed

⁷ The Staff inaccurately suggests an EIS is required only if "the proposed irradiator will 'have a significant effect on the human environment.'" 5/21/07 Staff Answers at 5 (emphasis added). It is well-established that an EIS is required whenever "substantial questions are raised as to whether a project may cause significant environmental degradation." National Parks & Conservation Ass'n v. Babbitt, 241 F.3d 722, 737 (9th Cir. 2001) (quoting Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1216 (9th Cir. 1998)); see also id. at 730. An agency cannot avoid its obligation to prepare an EIS on the grounds that significant impacts have not been conclusively established.

irradiator is “adequate to protect health and minimize danger to life or property,” the selection of the applicable design basis threshold probability in this proceeding likewise must ensure against threats to public health and safety. 10 C.F.R. § 30.33(a)(2); see also id. § 36.13(a) (Commission will approve application for license for irradiator only if applicant satisfies “general requirements specified in § 30.33”). Thus, while Concerned Citizens generally agrees with the Staff’s statement that “a design basis threshold probability for irradiators would be established in much the same way that the threshold probabilities were established for power reactors and ISFSIs,” it strongly disputes the Staff’s suggestion the threshold probability for irradiators should be “much lower than the threshold probabilities for power reactors and ISFSIs,” as a low threshold would provide inadequate protection. 5/21/07 Staff Answers at 8-9.

In the past, the Commission has observed that design bases at “facilities licensed by the Commission” should be “comparable.” 61 Fed. Reg. 64,257, 64,262 (Dec. 4, 1996); see also PFS, CLI-01-22, 54 NRC at 264. Consequently, Concerned Citizens contends the threshold probability for Pa‘ina’s irradiator should be no lower than the one-in-a-million standard applicable to geologic repositories and ISFSIs, which, like irradiators, do not operate “in the conditions of high temperatures and pressures under which [a nuclear] reactor operates.” PFS, CLI-01-22, 54 NRC at 265. The key consideration is to ensure radiation exposure to the public will remain within prescribed limits in the event of an aviation accident or natural disaster. There is no justification for the Staff’s suggestion the public should be accept greater risk merely because the facility at issue here is an irradiator, rather than another non-reactor facility.⁸

⁸ Please note that, to fully brief this important issue, Concerned Citizens would need far more time and pages than allowed pursuant to the Board’s June 6, 2007 order.

D. The Board Has The Discretion To Establish A Threshold Probability In This Proceeding Or May Certify The Question To The Commission.

Where, as here, the regulations do not establish a design basis threshold probability, the Board has the authority to establish one in the course of this proceeding, subject to ultimate review by the Commission on appeal, or “may refer the ruling promptly to the Commission.” 10 C.F.R. § 2.323(f)(1); see also PFS, CLI-01-22, 54 NRC at 257 (on referral, affirming Board’s ruling on standard for accidental aircraft crash hazards at ISFSIs). In the alternative, the Board appears to have the discretion under 10 C.F.R. § 2.319(l) to certify the question regarding the appropriate threshold to the Commission without having first made its own ruling on the matter.

E. Establishment Of A Probability Threshold Would Require The Staff To Issue Revised Safety And Environmental Documents, But Would Not Alter The Schedule For This Proceeding.

As discussed above, the establishment of a probability threshold is central to the Staff’s ability to perform a legally adequate analysis of Pa’ina’s compliance with 10 C.F.R. § 30.33(a)(2) and to take the “hard look” at potentially significant environmental impacts required under NEPA. Consequently, to comply with its legal duties, the Staff would have to revise both its safety evaluation and its NEPA analysis following the selection of an appropriate standard by either the Commission or the Board.

In establishing the schedule for this proceeding, the Board recognized the need to allow the Staff to complete its safety and environmental reviews prior to resolving the parties’ disputes over Pa’ina’s application. Accordingly, rather than establish fixed dates, the Board set deadlines for the filing of motions for summary disposition, the filing of direct written testimony, and the commencement of the evidentiary hearing in relation to the date of “issuance of [the Staff’s] Final SER and Final NEPA document.” 5/1/06 Order at 2. Giving the Staff the time necessary

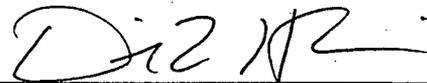
to incorporate the probability threshold for Pa'ina's proposed irradiator into its analyses would not, therefore, require any change to the existing scheduling order.

F. The Staff Must Quantify Threats Related To Terrorism.

In responding to the Board's questions regarding its NEPA review of terrorist threats, the Staff stated it intended to use "an informed qualitative analysis," rather than quantify the risks to the public and environment from terrorist attacks involving Pa'ina's proposed irradiator. 5/21/07 Staff Answers at 11. As discussed in Part II.B, supra, the Staff cannot lawfully rely on qualitative statements about potential impacts from terrorism "absent a justification regarding why more definitive information could not be provided." Klamath-Siskiyou Wilderness Center, 387 F.3d at 994 (quoting Neighbors of Cuddy Mountain, 137 F.3d at 1380).⁹ As the Ninth Circuit stressed in San Luis Obispo Mothers for Peace, the existence of probabilistic risk assessments of terrorist activities by the Department of Homeland Security and others casts serious doubts on any claim the "risk of terrorism cannot be quantified." 449 F.3d at 1032 n.9.

Dated at Honolulu, Hawai'i, June 13, 2007.

Respectfully submitted,



DAVID L. HENKIN
Earthjustice
223 South King Street, Suite 400
Honolulu, Hawai'i 96813
Tel. No.: (808) 599-2436
Fax No. (808) 521-6841
Email: dhenkin@earthjustice.org

⁹ The Staff's reliance on the Commission's statement in Pacific Gas & Elec. Co. (Diablo Canyon Power Plant ISFSI), CLI-07-11, 64 NRC __ (Feb. 26, 2007) is misplaced. The Commission said merely the Staff "may rely, where appropriate, on qualitative rather than quantitative considerations." Id., slip op. at 4 (emphasis added). The Commission did not give the Staff *carte blanche* to refuse to conduct a quantitative analysis where one is possible.

CERTIFICATE OF SERVICE

The undersigned hereby certifies that, on June 13, 2007, a true and correct copy of the foregoing document was duly served on the following via e-mail and first-class United States mail, postage prepaid:

Fred Paul Benco
Suite 3409, Century Square
1188 Bishop Street
Honolulu, Hawai'i 96813
E-Mail: fpbenco@yahoo.com
Attorney for Pa'ina Hawaii, LLC

Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
Attn: Rulemakings & Adjudications Staff
E-Mail: HEARINGDOCKET@nrc.gov

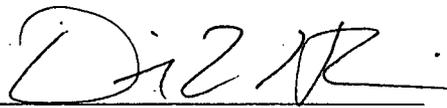
Margaret J. Bupp
U.S. Nuclear Regulatory Commission
Office of the General Counsel
Mail Stop – O-15 D21
Washington, DC 20555-0001
E-mail: mjb5@nrc.gov

Administrative Judge
Paul B. Abramson
Atomic Safety & Licensing Board Panel
Mail Stop – T-3 F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
E-mail: pba@nrc.gov

Administrative Judge
Thomas S. Moore, Chair
Atomic Safety & Licensing Board Panel
Mail Stop – T-3 F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
E-Mail: tsm2@nrc.gov

Administrative Judge
Anthony J. Baratta
Atomic Safety & Licensing Board Panel
Mail Stop – T-3 F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
E-Mail: ajb5@nrc.gov

Dated at Honolulu, Hawai'i, June 13, 2007.



DAVID L. HENKIN
Attorney for Intervenor
Concerned Citizens of Honolulu



EARTHJUSTICE

Because the earth needs a good lawyer

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TRANSMITTAL LETTER

TO: Office of the Secretary VIA FIRST CLASS MAIL
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
Attention: Rulemakings and Adjudications Staff

FROM: David L. Henkin

DATE: June 13, 2007

RE: Pa`ina Hawaii, LLC (Materials License Application), Docket No. 30-36974-ML,
ASLBP No. 06-843-01-ML

ENCLOSURES	DATE	DESCRIPTION
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Original and two copies:	6/13/07	INTERVENOR CONCERNED CITIZENS OF HONOLULU'S RESPONSE TO THE NRC STAFF'S ANSWERS TO THE QUESTIONS POSED IN THE LICENSING BOARD'S APRIL 30, 2007 ORDER; CERTIFICATE OF SERVICE
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REMARKS: