

October 16, 2007 (8:00am)

OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF

October 15, 2007

Docket No. 40-8838-ML

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
Pa'ina Hawaii, LLC	)	Docket No. 30-36974-ML
	)	ASLBP No. 06-843-01-ML
Material License Application	)	
_____	)	

INTERVENOR CONCERNED CITIZENS OF HONOLULU'S REPLY TO NRC STAFF'S  
RESPONSE TO INTERVENOR'S CONTENTIONS ON STAFF'S SAFETY REVIEW

I. INTRODUCTION

Pursuant to 10 C.F.R. § 2.309(h)(2), intervenor Concerned Citizens of Honolulu files its reply to the Nuclear Regulatory Commission ("NRC") Staff's Response To Intervenor's Contentions On Staff's Safety Review (dated October 9, 2007). As discussed in detail below, the Board should admit Safety Contentions #15 and #16, which are within the scope of this proceeding, timely, and present genuine disputes regarding whether applicant Pa'ina Hawaii, LLC has satisfied its burden to demonstrate its proposed irradiator would be safe from aviation accidents and natural disasters.

II. SAFETY CONTENTIONS #15 AND #16 RAISE ISSUES WITHIN THE SCOPE OF THIS PROCEEDING

The Board should reject the Staff's argument that Safety Contentions #15 and #16 are inadmissible attacks on the Staff's performance of its regulatory responsibilities. See Staff's Response at 6-7. As the Board previously recognized, in this proceeding, "to the extent that any safety analysis [of risks posed by aviation accidents, and natural disasters] has been done[,] ... it

TEMPLATE = SECY-037

SECY-02

has been done by or at the behest of the Staff.” 8/31/07 Board Memorandum at 6 n.13 (Certifying Question to the Commission). Pa’ina, conceding that such issues are “in all likelihood beyond [its] technical expertise,” has not conducted its own analyses, opting instead to incorporate by reference into its application the Staff’s various assessments. Id. at 2 n.2. Consequently, Safety Contentions #15 and #16 are properly viewed as challenging the adequacy of the Staff’s analysis – whether denominated a Safety Evaluation Report (“SER”) or Safety Review – to satisfy Pa’ina’s “burden to ensure adequate protection for the public and environment in the event of aviation accidents or natural disasters involving the proposed irradiator,” not as an attack on the Staff’s performance of its duties. 9/14/07 Contentions at 9; see also id. at 2 (contentions raise issues “regarding the failure to demonstrate compliance with 10 C.F.R. § 30.33(a)(2)”).<sup>1</sup> Admission of such a contention is proper where, as here, “the appropriate justification for the applicant’s request” is not found “in its licensing submission,” but instead is alleged to be in the Staff’s safety review. Private Fuel Storage, LLC (Independent Spent Fuel Storage Installation), LBP-01-03, 53 NRC 84, 97 (2001).<sup>2</sup>

The May 1, 2006 Board order that established the schedule for this proceeding expressly provides for the filing of contentions related to the SER, providing a deadline of thirty days from the document’s issuance. 5/1/06 Board Order at 2. The Board based this schedule “on the Commission’s Model Milestones for 10 C.F.R. Part 2, Subpart L, proceedings,” id. at 1, which likewise provide thirty days to file “[p]roposed late-filed contentions on SER.” 10 C.F.R. Part 2, App. B.II. Notably, the Staff itself had recommended that the Board provide for the filing of

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<sup>1</sup> Disputes over whether Pa’ina has satisfied its burden to demonstrate safety are “with the applicant,” not the Staff. 10 C.F.R. § 2.309(f)(1)(vi); see Staff’s Response at 7.

<sup>2</sup> “Bearing in mind the general admonition that technical perfection is not an essential element of contention pleading,” the references to the Staff in Safety Contentions #15 and #16 do not warrant rejecting the contentions. Id. at 99.

contentions based on the Staff's safety review, implicitly conceding that such contentions fall within the scope of this proceeding. See 4/20/06 NRC Staff and Concerned Citizens of Honolulu's Proposed Hearing Schedules at 1-2 & nn.2, 4 (ML061320091).

The Commission's discussion of the 2004 amendments to the NRC hearing regulations confirms the propriety of filing contentions based on information contained in the Staff's safety review of Pa'ina's proposed irradiator. The portions of the Federal Register notice that the Staff selectively cites merely explain the Commission's reasons for declining "to allow free amendment and addition of contentions based upon new information such as the SER." 69 Fed. Reg. 2,182, 2,202 (Jan. 14, 2004) (emphasis added). Rather than allow "free amendment," the Commission determined that, where "information in the SER bears upon an existing contention or suggests a new contention," "admission of amended or new contentions" should be evaluated pursuant to the standards applicable to all other late-filed contentions. Id. (citing 10 C.F.R. § 2.309(c)). As discussed in its initial filing and herein, Safety Contentions #15 and #16 satisfy those standards and should be admitted.

### III. SAFETY CONTENTIONS #15 AND #16 ARE BASED ON MATERIALLY DIFFERENT INFORMATION

The Staff correctly notes that, when Concerned Citizens filed its October 3, 2005 hearing request, it was "aware that the Licensee's application ... did not contain certain information on risks associated with aircraft crashes and natural phenomena." Staff's Response at 8. That is why, as the Staff also accurately states, Concerned Citizens' hearing request included "two safety contentions on those issues." Id. Safety Contention #6 challenged the complete absence from Pa'ina's application of any "discussion of the potential for ... emergency events" associated with natural disasters, which evinced Pa'ina's failure to make "the requisite showing

that its 'proposed equipment and facilities [would be] adequate to protect health and minimize danger to life or property.'" 10/3/05 Hearing Request at 10, 15 (quoting 10 C.F.R. § 30.33(a)(2)); see also 12/1/05 Reply in Support of Hearing Request at 17-18 (Pa'ina "failed to design its irradiator to withstand natural disasters, violating 10 C.F.R. § 30.33(a)(2)").<sup>3</sup> Safety Contention #7 challenged Pa'ina's failure "to address the likelihood and consequences of an air crash," also in violation of 10 C.F.R. § 30.33(a)(2). 10/3/05 Hearing Request at 15; see also 12/1/05 Reply in Support of Hearing Request at 19-20.

In the two years since it filed its hearing request, Concerned Citizens has been diligent in filing new or amended contentions to challenge the deficiencies in subsequently issued documents that purport to address the potential for aviation accidents and natural disasters involving the proposed irradiator to threaten public safety and the environment. Cf. Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc. (Vermont Yankee Nuclear Power Station), LBP-04-33, 60 NRC 749, 754 (2004) (citing Consumers Power Co. (Midland Plant, Units 1 and 2), LBP-82-63, 16 NRC 571, 577 (1982)) ("Newly available material information has long been held to provide good cause to file a new contention"). Thus, following the Staff's issuance of draft and final Topical Reports on the Effects of Potential Natural Phenomena and Aviation Accidents at the Pa'ina Hawaii, LLC Irradiator Facility (ADAMS Accession Nos. ML063560344 and ML071280833, respectively), Concerned Citizens timely challenged the reports' adequacy in safety contentions filed on February 9 and June 1,

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<sup>3</sup> The Board ultimately decided to admit Safety Contention #6 solely as a contention of omission (due to the lack of required outlines of emergency procedures for natural disasters). See Pa'ina Hawaii, LLC (Material License Application), LBP-06-12, 63 NRC 403, 418 (2006). Since the Board did not deny Concerned Citizens' hearing request "in its entirety," Concerned Citizens has not yet had an opportunity to appeal the Board's exclusion of the aspect of Safety Contention #6 challenging Pa'ina's failure to perform the requisite analysis of safety concerns related to natural phenomena. Exelon Generation Co., LLC (Early Site Permit for the Clinton ESP Site), CLI-04-31, 60 NRC 461, 468 (2004); see also 10 C.F.R. § 2.311(b).

2007. See 4/30/07 Board Order at 1 (Posing Questions for the Parties) (noting Concerned Citizens' safety contentions regarding Draft Topical Report were "timely").

While the draft and final topical reports' analyses of threats from aviation accidents, tsunamis and hurricanes suffer from fatal flaws that render them inadequate to demonstrate Pa'ina's compliance with 10 C.F.R. § 30.33(a)(2), those documents at least claim to address the safety risks associated with construction and operation of a nuclear irradiator at Pa'ina's preferred site. In contrast, the SER reverts to the position Pa'ina adopted in its original application, purporting to establish the facility's safety without undertaking any evaluation of these threats. See SER at 6 (concluding Pa'ina's "application satisfies all NRC's [sic] requirements" for safety) (ML072260186). The information presented in the SER – or, rather, the lack thereof – "is materially different than" the information previously available in the topical reports. 10 C.F.R. § 2.309(f)(2)(ii). As expected, Pa'ina is now attempting to rely on the SER to demonstrate its proposed irradiator's safety. See generally 10/1/07 Pa'ina's Answer To Contentions Re: Final Safety Evaluation Report; see also 8/31/07 Board Memorandum at 2 n.2 (noting Pa'ina's reliance on Staff's analysis of safety issues due to Pa'ina's lack of "technical expertise"). Concerned Citizens properly seeks admission of Safety Contention #15 to resolve the dispute over the "material issue" whether Pa'ina can satisfy 10 C.F.R. § 30.33(a)(2) in the absence of a thorough and accurate analysis of safety risks from aviation accidents, tsunamis and hurricanes. 10 C.F.R. § 2.309(f)(1)(vi).

While the SER completely ignores potential threats from aviation accidents, tsunamis and hurricanes, it does present a cursory analysis of safety issues related to earthquakes. See SER at 4. Safety Contention #16 properly focuses on those aspects of the SER's analysis that materially differ from previously available information. None of the documents the Staff or Pa'ina

disclosed prior to the SER's issuance in August 2007 relied on blow count values to claim "the factor of safety against liquefaction would be in an acceptable range." SER at 4.<sup>4</sup> This new analysis of earthquake risks "was not previously available," and "is materially different than information previously available," warranting the filing of a new contention. 10 C.F.R. § 2.309(f)(2)(i) and (ii).

#### IV. THE REGULATIONS PERTAINING TO IRRADIATORS REQUIRE COMPLIANCE WITH 10 C.F.R. § 30.33(a)(2)

The Staff's arguments about 10 C.F.R. Part 36's "comprehensive set of rules for irradiators" ignores a crucial fact: in adopting its "regulations applying to irradiators specifically," the Commission expressly required applicants like Pa'ina to demonstrate their proposed facilities' compliance with 10 C.F.R. § 30.33(a)(2). Staff's Response at 10. In describing the specific licensing requirements for irradiators, 10 C.F.R. § 36.13(a) – which is in Part 36 – mandates that "[t]he applicant shall satisfy the general requirements specified in § 30.33 of this chapter." Those general requirements include 10 C.F.R. § 30.33(a)(2), which places on Pa'ina the burden to demonstrate its "proposed equipment and facilities are adequate to protect health and minimize danger to life or property."

The Statement of Considerations accompanying the Part 36 regulations' promulgation confirms the Commission's intent to require irradiator license applicants to demonstrate compliance with 10 C.F.R. § 30.33(a)(2). In summarizing section 36.13, the Commission noted

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<sup>4</sup> On October 9, 2007, Staff counsel Michael Clark provided via email a document dated May 9, 2006 and entitled "Review of RAI Responses Received From Pa'ina Hawaii, LLC's [sic], In Letter Dated March 9, 2006," which contains an analysis of blow counts similar to the one in the SER. Henkin Supp. Dec. ¶ 3; see also Exh. 9: 5/9/06 Review at 2. The Staff had not previously disclosed the existence of this document in its periodic hearing file updates nor had the Staff included the document in the hearing file. Moreover, while Mr. Clark's email provides an ADAMS accession number (ML061780405), the document is not accessible on ADAMS. Henkin Dec. ¶ 4.

it “describes information that must be included in a license application if it is to be approved by the Commission.” 58 Fed. Reg. 7,715, 7,717 (Feb. 9, 1993) (emphasis added). The Commission then recited 10 C.F.R. § 30.33(a)(2) nearly word-for-word, listing among the mandatory contents of irradiator license applications that “[t]he applicant's proposed equipment and facilities must be adequate to protect the health of workers and the public and minimize danger to life and property.” Id. There can be no serious question but that, to comply with the “‘comprehensive, formal set of regulations’ in Part 36,” Pa’ina must demonstrate its proposed irradiator satisfies 10 C.F.R. § 30.33(a)(2). Staff’s Response at 10 (quoting 58 Fed. Reg. at 7,716).

The Commission’s discussion in the Statement of Considerations of risks posed by aviation accidents and natural disasters does not, as the Staff argues, relieve Pa’ina of its burden to demonstrate its proposed irradiator would be safe from such threats. See Staff Response at 10-11. 10 C.F.R. § 36.13(a) expressly requires Pa’ina to comply with 10 C.F.R. § 30.33(a)(2), which is equally clear in placing the burden on the applicant to demonstrate its proposed facility would be safe from all threats. Since the plain language of the applicable regulations is unambiguous, it would be improper to resort to the regulatory history to justify a contrary interpretation. Entergy Nuclear Vermont Yankee, L.L.C., and Entergy Nuclear Operations, Inc., (Vermont Yankee Nuclear Power Station), LBP-04-31, 60 NRC 686, 705 (2004) (“When ‘the meaning of the regulation is clear and obvious, the regulatory language is conclusive’ and a Board is ‘not free to go outside the express terms of an unambiguous regulation to extrinsic aids such as regulatory history’”) (quoting Cleveland Elec. Illuminating Co. (Perry Nuclear Power Plant, Unit 1), LBP-95-17, 42 NRC 137, 145 (1995)).

Even if it were proper for the Board to consider the regulatory history, nothing in the Statement of Considerations suggests the Commission gave any thought to whether irradiators of

the design Pa'ina proposes would be safe from aviation accidents or natural disasters. As this Board previously noted in rejecting a similar claim asserted by Pa'ina with respect to aviation accidents:

The comments relied upon by the Applicant are from the Statement of Considerations to the Part 36 rulemaking discussing panoramic irradiators in which “[t]he radioactive sources ... would be relatively protected from damage because they are generally contained within 6-foot thick reinforced-concrete walls and are encapsulated in steel.” As the Petitioner also points out, the sources in the Pa'ina Hawaii irradiator “would be in a pool with a liner consisting of 6 inches of concrete, with ¼-inch steel on the inside and outside.”

Pa'ina Hawaii, LBP-06-12, 63 NRC at 419 (emphasis added; citations omitted). The Commission's discussions of earthquakes, tornadoes, and other natural hazards likewise assumed a panoramic irradiator, whose six-foot thick “shield walls by their nature are inherently strong.” 58 Fed. Reg. at 7,720; see also id. at 7,720 (“Studies of irradiator shield designs have shown that the shields are inherently able to withstand large earthquakes”), 7,721 (“there was no need for special design requirements because the shielding by its very nature (about six feet thick reinforced concrete) is inherently resistant to tornadoes”), 7,726 (“no siting requirements with respect to possible flooding or tidal waves could be justified on a health and safety basis because flooding of the facility would not destroy the integrity of the shielding walls”) (emphasis added). The Commission never considered the safety of the materially different irradiator design that Pa'ina proposes.

Finally, even the Staff concedes that “the Commission recognized that it may be appropriate for the NRC to review facility siting on a case-by-case basis ‘if a unique threat is involved which may not be addressed by State and local requirements.’” Staff's Response at 10 (quoting 58 Fed. Reg. at 7,725). The Staff's position “that absent extraordinary and unique circumstances calling for additional analysis,” Pa'ina need demonstrate compliance with only

“the specific irradiator rules at Part 36” begs the question whether such extraordinary circumstances are present here, where Pa‘ina proposes to locate its irradiator in a tsunami evacuation zone, at a site that is particularly vulnerable to hurricane-related flooding, and where the facility would face up to a 1-in-1,757 annual risk of being struck by an airplane. Id. at 11 (emphasis added); see also Exh. 2: 2/9/07 Resnikoff Dec. ¶¶ 10-11; Exh. 3: 2/7/07 Resnikoff Report; Exh. 4: 2/9/07 Pararas-Carayannis Dec. ¶¶ 12-29; Exh. 5: 2/07 Pararas-Carayannis Report.<sup>5</sup> Concerned Citizens contends that unique threats are present and that, accordingly, comprehensive and accurate analyses of the consequences of aviation accidents and natural disasters are required to determine whether Pa‘ina’s proposed irradiator complies with 10 C.F.R. § 30.33(a)(2).<sup>6</sup> While Pa‘ina and the Staff may dispute the existence of unique threats, “[a]t the contention admissibility stage of the proceeding,” such “a factual defense is generally inappropriate and irrelevant.” Pa‘ina Hawaii, LBP-06-12, 63 NRC at 406.

V. THE BOARD SHOULD ADMIT SAFETY CONTENTION #16 TO RESOLVE DISPUTES OVER WHETHER THE IRRADIATOR WOULD BE SAFE IN THE EVENT OF AN EARTHQUAKE

The Staff’s objections to Safety Contention #16 merely establish the existence of “genuine dispute[s]” on “material issue[s] of law [and] fact,” warranting admission of the contention. 10 C.F.R. § 2.309(f)(1)(vi). The Staff initially tries to rebut Concerned Citizens’ challenge to the SER’s failure to analyze whether the blow counts recorded at Pa‘ina’s preferred

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<sup>5</sup> The Staff’s argument ignores that “the specific irradiator rules at Part 36” – in particular, 10 C.F.R. § 36.13(a) – themselves require compliance with 10 C.F.R. § 30.33(a)(2). Therefore, the Staff is mistaken when it asserts Concerned Citizens does not contend an analysis of aircraft crashes, tsunamis, and hurricanes “is required by 10 C.F.R. Part 36.” Staff’s Response at 11; see also 9/14/07 Contentions at 6 (citing 10 C.F.R. § 36.13(a)).

<sup>6</sup> Concerned Citizens is not aware of any state or local requirements that specifically apply to irradiators. Thus, there is no basis for the Staff’s suggestion that state or local requirements would adequately address the unique threats associated with Pa‘ina’s preferred site for its proposed irradiator. Staff’s Response at 12.

site are, in fact, “of an adequate value” to keep “the factor of safety against liquefaction ... in an acceptable range.” SER at 4. In support of its contention, Concerned Citizens offers testimony from expert Dr. George Pararas-Carayannis, who has concluded that the recorded blow counts are far from adequate to ensure against damage from liquefaction and has highlighted numerous flaws in the SER’s analysis. See 9/14/07 Contentions at 6-7; see generally 9/12/07 Pararas-Carayannis Dec.<sup>7</sup> The Staff’s “factual defense” that it performed its analysis properly is “irrelevant and inappropriate” at the contention admissibility stage of the proceeding. Pa‘ina Hawaii, LBP-06-12, 63 NRC at 406; see also Staff’s Response at 13.

Reduced to its essence, the remainder of the Staff’s argument is that, in promulgating the Part 36 regulations, the Commission intended to allow irradiators to “‘be built in any area of the country’ as long as licensees complied with local building requirements pertaining to seismic events.” Staff’s Response at 14 (quoting 58 Fed. Reg. at 7,726). The Staff’s response ignores that, as discussed above, all the language it cites from the Statement of Considerations refers to only panoramic irradiators, whose six-foot thick shield walls the Commission concluded “are inherently able to withstand large earthquakes.” 58 Fed. Reg. at 7,720; see also id. at 7,726 (noting need for irradiators to have “shielding walls designed to withstand an earthquake”). The Commission did not evaluate underwater irradiators of the design Pa‘ina proposes. Moreover,

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<sup>7</sup> Documents the Staff has disclosed in the past two weeks lend additional support to Dr. Pararas-Carayannis’s opinion that the numerous blow counts with values below 15 recorded at Pa‘ina’s preferred site indicate a substantial risk of liquefaction from even a relatively small earthquake. See 9/12/07 Pararas-Carayannis Dec. ¶ 10. On October 5, 2007, the Staff disclosed the non-publicly available version of the SER, which states that blow counts must have “a value of 18 or more” to provide acceptable protection against liquefaction. Exh. 10: 8/14/07 Safety Review (non-publicly available version) at 4 (ML072260157) (emphasis added). The May 9, 2006 review of Pa‘ina’s responses to requests for additional information – which the Staff first disclosed on October 9, 2007 – notes the boring “located nearest to the proposed pool location” recorded a blow count with a value of only 9, half the minimum value the Staff identified as needed to provide adequate protection against liquefaction. 5/9/06 Review at 2.

“the lack of a regulatory prohibition against siting an irradiator [in a location vulnerable to earthquakes] does not affirmatively establish that any ... 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, LBP-06-12, 63 NRC at 419.<sup>8</sup>

As discussed in its reply to Pa’ina’s answer, Concerned Citizens vigorously disagrees with the Staff’s and Pa’ina’s claim that mere compliance with the building code would ensure the safety of the public and environment from an earthquake at Pa’ina’s preferred site. See 10/8/07 Reply at 7. Rather, Concerned Citizens contends that, given the potential for significant harm to public safety and the environment in the event of a structural failure involving the irradiator, detailed analysis of the soil conditions at the specific proposed site – which has not yet been done – is vital to assess whether an earthquake would threaten public safety. 10/5/07 Pararas-Carayannis Supp. Dec. ¶ 12 The Board should admit Safety Contention #16 to resolve the parties’ disputes regarding this important safety issue.

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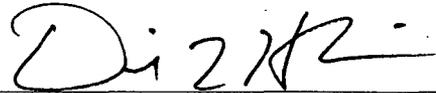
<sup>8</sup> There is no basis for the Staff’s claim that Concerned Citizens “seek[s] to impose requirements in addition to those set forth in the regulations.” Staff’s Response at 14. Rather, Concerned Citizens seeks to enforce the requirements set forth in 10 C.F.R. § 30.33(a)(2), one of the regulations the Commission expressly intended would apply to irradiator applications. See 10 C.F.R. § 36.13(a); 58 Fed. Reg. at 7,717.

VI. CONCLUSION

For the foregoing reasons, Concerned Citizens respectfully asks the Board to admit Safety Contentions #15 and #16.

Dated at Honolulu, Hawai'i, October 15, 2007.

Respectfully submitted,



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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
Pa'ina Hawaii, LLC	)	Docket No. 30-36974-ML
	)	ASLBP No. 06-843-01-ML
Material License Application	)	
_____	)	

**SUPPLEMENTAL DECLARATION OF DAVID L. HENKIN**

I, David L. Henkin, declare:

1. I am an attorney at law, duly licensed to practice before all courts of the State of Hawai'i, the U.S. District Court for the District of Hawai'i, the U.S. Court of Appeals for the 9<sup>th</sup> Circuit, and the U.S. Supreme Court. I am the lead attorney for intervenor Concerned Citizens of Honolulu.

2. I make this supplemental declaration in support of Concerned Citizens' Contentions Re: Final Safety Evaluation Report. This declaration is based on my personal knowledge, and I am competent to testify about the matters contained herein.

3. Attached hereto as Exhibit "9" is a true and correct copy of an email that Michael Clark, counsel to the Nuclear Regulatory Commission Staff, sent on October 9, 2007, together with excerpts from a true and correct copy of the attached document dated May 9, 2006 and entitled "Review of RAI Responses Received From Pa'ina Hawaii, LLC's [sic], In Letter Dated March 9, 2006." Mr. Clark was responding to an email I had sent to him on October 8, 2007, noting that Concerned Citizens had been unable to find one document that was referenced repeatedly and identified only as "ML061780405" in the non-publicly available version of the

safety review of Pa'ina's license application (ML072260157), which Mr. Clark had provided via electronic mail on October 5, 2007.

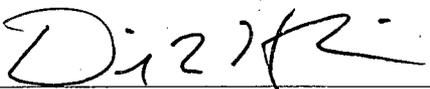
4. Prior to receiving Mr. Clark's October 9, 2007 email, Concerned Citizens was completely unaware of the existence of the May 9, 2006 review. The Staff had not previously disclosed this document in its periodic hearing file updates nor had the Staff included it in the hearing file. Moreover, while the non-publicly available version of the Staff's safety review and Mr. Clark's email provided an ADAMS accession number (ML061780405), the document is not accessible on ADAMS.

5. Attached hereto as Exhibit "10" is a true and correct copy of an email that Michael Clark, counsel to the Nuclear Regulatory Commission Staff, sent on October 5, 2007, together with excerpts from a true and correct copy of the non-publicly available version of the Staff's August 14, 2007 safety review of Pa'ina's license application (ML072260157), which was attached to Mr. Clark's email.

6. Prior to receiving Mr. Clark's October 5, 2007 email, Concerned Citizens was completely unaware of the existence of the non-publicly available version of the safety review. The Staff first disclosed this document's existence in its October 5, 2007 Hearing File Index Update, and the document was not previously available in either the hearing file or via ADAMS.

I declare under penalty of perjury that I have read the foregoing declaration and know the contents thereof to be true of my own knowledge.

Dated at Honolulu, Hawai'i, October 15, 2007.

  
\_\_\_\_\_  
DAVID L. HENKIN

## David Henkin

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**From:** Michael Clark [MJC1@nrc.gov]  
**Sent:** Tuesday, October 09, 2007 12:55 PM  
**To:** David Henkin; Fred Benco  
**Subject:** Pa'ina Hawaii, LLC: Document Attached

**Attachments:** ML0617804052.pdf



ML0617804052.pdf  
(707 KB)

The NRC Staff's most recent hearing file update, dated October 5, 2007, listed a document which, in turn, refers to the following document, "Review of RAI Responses Received From Pa'ina Hawaii, LLC, In Letter Dated March 9, 2006" (May 9, 2006) (ADAMS ML061780405). In the event you do not already have this document, I am attaching an electronic copy.

Please let me know if you would like me to send the document by facsimile or U.S. mail.

Michael Clark  
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EXHIBIT 9



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
611 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TEXAS 76011-4005

May 9, 2006

MEMORANDUM TO: Jack E. Whitten, Chief  
Nuclear Materials Licensing Branch

THRU: D. Blair Spitzberg, PhD, Chief /RA/  
Fuel Cycle and Decommissioning Branch

FROM: Ray L. Kellar, P.E., Health Physicist /RA/  
Fuel Cycle and Decommissioning Branch

SUBJECT: REVIEW OF RAI RESPONSES RECEIVED FROM PA'INA HAWAII,  
LLC'S, IN LETTER DATED MARCH 9, 2006

FCDB has reviewed the Request for Additional Information (RAI) response received from Pa'ina Hawaii, LLC dated March 9, 2006. A phone call was held to clarify information contained in the response with Mr. Russell Stein of GrayStar on April 26, 2006. Many of the questions from the original RAI have been resolved. However, to clarify proposed construction methods that could impact the long-term suitability of the pool, FCDB recommends that additional questions be submitted to Pa'ina Hawaii, LLC. The list of additional questions are attached to this memorandum as Attachment 1.

Based on a review of the RAI responses, FCDB has the following observations:

Pool Integrity

Based on the RAI response, the applicant meets the requirement of 10 CFR 36.41(c) for testing the pool integrity. The applicant intends to perform a hydrostatic leak test of the pool liners at the fabrication facility, a visual inspection of the pool liners for damage during receipt inspection at the installation site, and finally another hydrostatic leak test of the internal stainless steel liner during the installation process. Recommended NRC inspection activities include an inspection of the manufacturer's facility, a review of the fabricator leak test documentation, and witnessing the final leak test performed at the installation site.

Overhead Hoist

The overhead trolley, rail and hoist that is used to move material over the pool is not regulated by 10 CFR 36. The applicant has stated that the trolley, rail and hoist will be designed, tested, installed, and maintained in accordance with ANSI B30.16, "Overhead Hoists (Underhung)." Adherence by the applicant to industry standard ANSI B30.16 and the use of a good rigging program should provide adequate protection against catastrophic failure of the trolley, rail or hoist.

Pool Design

The applicant indicated that the pool was designed and fabricated to resist a combined at-rest fluid and hydrostatic pressure of 144 pounds per cubic foot, which is substantially greater than

the Weidig minimum recommend value of 78 pounds per cubic foot. The planned construction method using sheet piles combined with a lean concrete backfill between the pool and the sheet piles should reduce the lateral pressure exerted on the pool walls to well below 144 pounds per cubic foot. Corrosion of the carbon steel pool components are expected to be minimal and are not anticipated to degrade the stainless steel pool liner.

#### Concrete Pool Foundation

The applicant described the proposed process for placing the concrete foundation beneath the pool. The description included pouring the foundation material into the excavation until it fills the space beneath the pool and comes up the side of the pool a short distance. The applicant plans to install tremie concrete at the bottom of the excavation, to block water flow into the excavation area. The top surface of tremie placed concrete will not be uniform and could inhibit concrete placement below the pool foundation. One method to ensure that the concrete placement process minimizes the potential for void formation beneath the pool foundation, consists of utilizing a very fluid concrete mix that is placed entirely from one side of the excavation using sufficient concrete head pressure to force the concrete to flow out from underneath the far side of the pool. The applicant has provided insufficient details to determine the acceptability of the proposed concrete placement method for the pool foundation. Question number three included in Attachment 1, requests additional details of the proposed construction method.

#### Potential Soil Liquefaction

The applicant's RAI response did not adequately address potential settlement due to soil liquefaction during a seismic event. Instead the applicant's response appeared to address horizontally induced seismic stresses. The applicant stated that acceleration of the pool would be experienced by the entire pool structure thus resulting in no damage to the pool and that the only effect of liquefaction would be increased soil pressure on the outsides of the pool walls. Staff calculations using equations found in "Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER and 1998 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils," taken from the Journal of Geotechnical and Geoenvironmental Engineering, October 2001; and Reg Guide 1.198, "Procedures and Criteria for Assessing Seismic Soil Liquefaction at Nuclear Power Plant Sites," indicated that the factor of safety against liquefaction would be in an acceptable range as long as the Standard Penetration Test (SPT) blowcount from the soil boring was a value of 18 or more. The SPT blowcount provides a direct correlation to soil density and an indirect correlation to the soil's ability to resist liquefaction. A smaller SPT blowcount value indicates a loose soil, while a larger SPT blowcount value indicates increased soil density. Soil boring number five is located nearest to the proposed pool location. The SPT blowcount from soil boring number five at a depth of 15 feet was reported as 9, while the SPT blowcount at a depth of 20 feet was reported as 23. The bottom of the excavation should be founded on the denser soil layer that begins at an undermined elevation below 15 feet. Question number one included in Attachment 1, requests clarification on the method that the excavation contractor/geotechnical engineer will use to assess the suitability of the soil during the excavation activities. Pending successful resolution to the new question, the seismic and liquefaction potential of the site appears to be satisfactory.

**David Henkin**

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**From:** Michael Clark [MJC1@nrc.gov]  
**Sent:** Friday, October 05, 2007 4:50 PM  
**To:** David Henkin; Fred Benco  
**Subject:** Pa'ina: Attachments to Hearing File Update

**Attachments:** ML0722505491.pdf; ML0722601571.pdf; ML0726701143.pdf



ML0722505491.pdf (2 MB) ML0722601571.pdf (116 KB) ML0726701143.pdf (145 KB)

The Staff's October 5, 2007 hearing file update refers to certain documents that may not be publicly available at the time of filing. I am therefore forwarding electronic versions of three of the four documents listed in the update. Each of you should already have a copy of the fourth document, the Microshield Summary addressing an 8-foot water loss.

Please let me know if you have any questions or if you would also like me to send these documents by fax or U.S. mail.

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EXHIBIT 10

**PA'INA HAWAII, LLC**  
**Docket No. 030-36974, Mail Control No. 470601**  
**Application for an underwater irradiator license**

**Background and overall summary**

The U.S. Nuclear Regulatory Commission (NRC) received on June 27, 2005, from Pa'ina Hawaii, LLC, an application for the possession and use of byproduct material to be used in a commercial pool type industrial irradiator to be constructed in Honolulu, Hawaii, near the Honolulu International Airport. The proposed irradiator would primarily be used for phytosanitary treatment of fresh fruit and vegetables bound for the mainland from the Hawaiian Islands and similar products being imported to the Hawaiian Islands as well as irradiation of cosmetics and pharmaceutical products. The irradiator will also be used by the applicant to conduct research and development projects, and irradiate a wide range of other materials as specifically approved by the NRC on a case-by-case basis.

NRC held a public meeting on August 31, 2005, in Honolulu, Hawaii, to discuss the license and inspection processes that NRC staff will follow during the application review process, and to receive comments from external stakeholders on any concerns and issues associated with this license application. Earthjustice (petitioner), on behalf Concerned Citizens of Honolulu, submitted to the NRC on October 3, 2005, a request for a 10 CFR Part 2 hearing citing safety and environmental concerns. NRC's Atomic Safety and Licensing Board (ASLB) granted on January 24, 2006, the petitioner's request for a 10 CFR Part 2 hearing to determine admissibility of the petitioner's contentions.

Typically, the licensing of irradiators is categorically excluded from an environmental review as described in the NRC regulations at 10 CFR 51.22(c)(14)(vii). However, the NRC staff entered into a settlement agreement with Concerned Citizens of Honolulu, the interveners in the adjudicatory hearing on the license application. The settlement agreement included a provision for the NRC staff to prepare a draft environmental assessment (EA) and hold a public comment meeting in Honolulu, Hawaii, prior to publishing the final EA.

In accordance with the March 20, 2006, settlement agreement with Concerned Citizens of Honolulu, the NRC staff published in the Federal Register on December 28, 2006, a draft EA and draft Finding of No Significant Impact (FONSI), (71 Fed. Reg. 78231). The Federal Register notice invited public comment on the draft EA and draft FONSI and announced the staff's plan to hold a public meeting on February 1, 2007, in Honolulu, Hawaii to present the findings in the draft EA and accept comments from members of the public. More than 100 members of the public attended the February 1 meeting in Honolulu, where the staff made a 30 minute presentation on the draft EA and two hours were devoted to receiving questions and comments from members of the public. The staff issued a supplemental appendix to the draft EA (72 FR 31866) on June 8, 2007, which presented the staff's consideration of potential terrorist attacks at the proposed facility. On August 13, 2007, the staff issued its final EA and sent it to the Federal Register office for publication.

Pa'ina Hawaii, LLC

- Radiation monitors - Irradiator will have a water radiation monitor which will operate in a continuous mode and an area radiation monitor mounted over the pool.
- Irradiator manufacturing facility - Staff performed a site visit of the manufacturing facility, CHL Systems, in August 2006, to review pool drawings, welding procedures, and manufacturing processes. Visit is documented in ML062430045, ML062480089, and ML062500035.
- Pool Integrity - The applicant meets the requirement of 10 CFR 36.41(c) for testing the pool integrity based on staff assessment of applicant's responses (ML061780405, ML060730528, ML062640490, ML062770071).
- Overhead Hoist - The overhead trolley, rail and hoist that is used to move material over the pool is not regulated by 10 CFR 36. However, adherence by the applicant to industry standard ANSI B30.16, "Overhead Hoists (Underhung), and the use of a good rigging program should provide adequate protection against catastrophic failure of the trolley, rail or hoist.
- Pool Design - The pool will be designed and fabricated to resist a combined at-rest fluid and hydrostatic pressure substantially greater than the minimum recommend value. Corrosion of the carbon steel pool components are expected to be minimal and are not anticipated to degrade the stainless steel pool liner.
- Concrete Pool Foundation - The applicant's proposed process for placing the concrete foundation beneath the pool under different scenarios appear to be adequate based on staff assessment of applicant's responses (ML061780405, ML060730528, ML062640490, ML062770071).
- Potential Soil Liquefaction - Staff calculations using equations found in engineering literature and Regulatory Guide 1.198 indicated that the factor of safety against liquefaction would be in an acceptable range as long as the Standard Penetration Test (SPT) blowcount from the soil boring was a value of 18 or more. Actions that the applicant will take to avoid soil liquefaction appear to be adequate based on staff assessment of applicant's responses (ML061780405, ML060730528, ML062640490, ML062770071).
- Seismic Separation - A horizontal separation of six inches between the sides of the irradiator pool and the building slab should provide adequate isolation during a seismic event typical of the area.
- Pool Excavation Depth - Actions that the applicant will take to determine the pool excavation depth appears to be adequate based on staff assessment of applicant's responses (ML061780405, ML060730528, ML062640490, ML062770071).

## CERTIFICATE OF SERVICE

The undersigned hereby certifies that, on October 15, 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:

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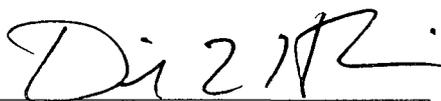
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In addition, the undersigned hereby certifies that, on October 15, 2007, a true and correct copy of the foregoing document was duly served on the following via e-mail:

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Dated at Honolulu, Hawai'i, October 15, 2007.

  
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DAVID L. HENKIN  
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