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September 16, 2008

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

INTERVENOR CONCERNED CITIZENS OF HONOLULU'S
REBUTTAL TO NRC STAFF'S STATEMENT OF POSITION

Pursuant to 10 C.F.R. § 2.1207(a)(2) and the Atomic Safety and Licensing Board's ("Board's") July 17, 2008 order, intervenor Concerned Citizens of Honolulu hereby submits its rebuttal to the Nuclear Regulatory Commission ("NRC") Staff's initial written statement of position on the admitted segments of amended environmental contentions 3 and 4.[1]

I. THE STAFF MISSTATES APPLICABLE LAW

A. The Staff's Approach of Withholding From Disclosure The Data And Analysis Underlying Its Environmental Assessment Unless And Until Challenged In An Administrative Hearing Contravenes Congressional Intent In Enacting NEPA.

In enacting the National Environmental Policy Act ("NEPA"), Congress understood that "public scrutiny" is "essential" to ensuring "high quality" information regarding the potential impacts of proposed undertakings "is available to public officials ... before decisions are made

[1] Since Concerned Citizens received the Staff's initial written statement and supporting documents by electronic transmission after 5:00 p.m. Hawai'i Standard Time on August 26, 2008, the twenty-day period for filing a written response was extended by one business day. See 10 C.F.R. § 2.306 (2007); 72 Fed. Reg. 49,139, 49,144 (Aug. 28, 2007) (amended § 2.306 "is legally applicable only to proceedings noticed after October 15, 2007").

TEMPLATE = SECY-037

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and before actions are taken." 40 C.F.R. § 1500.1(b). Accordingly, NEPA's implementing regulations mandate that federal agencies:

- "Make diligent efforts to involve the public in preparing and implementing their NEPA procedures;"
- Notify the public regarding "the availability of environmental documents so as to inform those persons and agencies who may be interested or affected;" and
- "Solicit appropriate information from the public."

Id. § 1506.1(a)-(b), (d). The Ninth Circuit has emphasized that "NEPA's public comment procedures are at the heart of the NEPA process," playing a vital role in "ensur[ing] that an agency is cognizant of all of the environmental trade-offs that are implicit in a decision." California v. Block, 690 F.2d 753, 770-71 (9th Cir. 1982); see also Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 349 (1989) (making information available to public "provides a springboard for public comment"). In our democratic system, the disclosures that NEPA documents provide also play a vital role in assuring the public "the agency 'has indeed considered environmental concerns in its decisionmaking process.'" Id. (quoting Baltimore Gas and Elec. Co. v. Natural Resources Defense Council, 462 U.S. 87, 97 (1983)); see also San Luis Obispo Mothers for Peace v. Nuclear Regulatory Comm'n, 449 F.3d 1016, 1034 (9th Cir. 2006), cert. denied sub nom, Pacific Gas & Elec. Co. v. San Luis Obispo Mothers for Peace, 127 S. Ct. 1124 (2007) (one of NEPA's purposes to ensure public "can access the information that is made public").

In defending its failure to disclose the data and analysis on which it based its conclusions, the Staff turns NEPA on its head. The Staff's hermetically sealed process – in which the public had no access to non-sensitive information during the public comment period on the draft

environmental assessment ("EA") and the final EA contains no mention of potential impacts and alternatives, much less any analysis of why the Staff determined they were not worthy of detailed analysis – is at odds with "the purposes that NEPA was designed by Congress to serve:" to "put on the table, for the [NRC's] and the public's view, a sufficiently detailed statement of environmental impacts and alternatives so as to permit informed decision making" regarding Pa'ina's proposed irradiator. Lands Council v. Powell, 395 F.3d 1019, 1027 (9th Cir. 2005). Concerned Citizens and other interested members of the public should not have to seek Board review of the Staff's EA to discover the reasons the Staff discounted various potential impacts and refused to analyze various alternatives. Moreover, by disclosing this information long after the public comment period is over, the Staff unlawfully precluded the "public scrutiny" that is "essential to implementing NEPA." 40 C.F.R. § 1500.1(b).

B. The Board's Review Is Limited To The Information Presented In The EA.

Implicitly conceding its EA falls short of satisfying NEPA, the Staff argues the Board "may look beyond the face of the NEPA document at issue to the administrative record to determine whether the 'Staff's underlying review was sufficiently detailed to qualify as "reasonable" and a "hard look" under NEPA – even if the Staff's description of that review in the [NEPA document] was not.'" Staff Statement at 21 (quoting Dominion Nuclear North Anna, LLC (North Anna ESP Site), CLI-07-27, 66 NRC 215, 230 (2007)) (emphasis added). The Staff's reliance on North Anna to argue that "[t]he Board's discussion of the disputed issues" can "add[] necessary additional details" to cure defects in the EA is misplaced. Id. (quoting North Anna, CLI-07-27, 66 NRC at 230). Unlike this proceeding, which is being conducted pursuant to the subpart L hearing regulations, North Anna involved a subpart G proceeding. See 68 Fed. Reg. 67,489, 67,489 (Dec. 2, 2003) ("The Board will conduct the hearing in accordance with

subpart G of 10 CFR part 2"). The Commission's regulations expressly provide for the Board to modify the Staff's environmental review – whether an EA or an environmental impact statement ("EIS") – "[w]hen a hearing is held on the proposed action under the regulations in subpart G." 10 C.F.R. § 51.102(c) (emphasis added); see also id. § 51.34(b) (finding of no significant impact ("FONSI") "subject to modification" when hearing held "under the regulations in subpart G").[2]

In contrast, the Commission's regulations do not authorize the Board to modify the Staff's review in this subpart L irradiator licensing proceeding. See United States v. Terrence, 132 F.3d 1291, 1294 (9th Cir. 1997) ("Under the doctrine of 'inclusio unius est exclusio alterius' ..., '[w]hen a statute limits a thing to be done in a particular mode, it includes a negative of any other mode'"); Longview Fibre Co. v. Rasmussen, 980 F.2d 1307, 1313 (9th Cir. 1992) ("No sensible person accustomed to the use of words in laws would speak so narrowly and precisely of particular statutory provisions, while meaning to imply a more general and broad coverage than the statutes designated"). Rather, the regulations flatly state that, in run-of-the-mill proceedings like this, the Staff prepares the final EA and FONSI. 10 C.F.R. §§ 51.31(a), 51.34(a).

Limiting the Board's review to the analysis presented in the EA is consistent with well-established Ninth Circuit precedent. In Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208 (9th Cir.1999), the Court squarely rejected the U.S. Forest Service's suggestion that supporting data in the 3,000-page administrative record could cure the "cursory and inconsistent treatment of sedimentation issues" in the EA for a timber salvage sale. Id. at 1214. Noting that "[t]he EA contains virtually no references to any material in support of or in opposition to its conclusion," the Court held that the text of the EA itself "is where the Forest Service's defense of

[2] The regulations also authorize the Board to modify the Staff's environmental analysis in proceedings involving the proposed issuance of a manufacturing license or amendment and "when the action can only be taken by the Commissioners acting as a collegial body," neither of which is the case here. Id. § 51.102(c); see also id. § 51.31(c)(4).

its position must be found." Id.; see also National Parks & Conservation Ass'n v. Babbitt, 241 F.3d 722, 732 (9th Cir. 2001) (same).

In this case, allowing the Staff to cure defects in the EA with information that – until the Staff filed its initial statement – was hidden from the public would contravene Congress's intent in enacting NEPA "to ensure that an agency is cognizant of all the environmental trade-offs that are implicit in a decision." Block, 690 F.2d at 771. As noted above, "[t]o effectuate this aim, NEPA requires ... public participation in the evaluation of [a project's] environmental consequences." Id.; see also 40 C.F.R. § 1500.1(b) ("public scrutiny [is] essential" to ensuring the environmental information available to decision-makers is "of high quality"). Allowing the Staff to buttress its analysis with information that was unavailable during the public comment period on the EA would "insulate[] its decision-making process from public scrutiny," "render[ing] NEPA's procedures meaningless." Block, 690 F.2d at 771; see also Idaho Sporting Cong. v. Thomas, 137 F.3d 1146, 1150 (9th Cir. 1998) ("ISC I") (when agency prepares EA, "NEPA requires that the public receive the underlying environmental data from which [an agency] expert derived her opinion").

Moreover, allowing the Staff to justify its issuance of a license to Pa'ina based on previously undisclosed information would undermine one of NEPA's central purposes: to "insure that environmental information is available to ... citizens before decisions are made and before actions are taken." 40 C.F.R. § 1500.1(b) (emphasis added). The Staff's decision to keep its data and analysis hermetically sealed until forced to reveal them in the course of this proceeding makes a mockery of the statute's "informational role." Public Citizen, 541 U.S. at

768.[3] Citizens should not have to go to court to find out whether the Staff "has indeed considered environmental concerns in its decisionmaking process;" the information in the Final EA itself is supposed to provide those assurances. Public Citizen, 541 U.S. at 768 (quoting Baltimore Gas and Electric Co., 462 U.S. at 97).

C. The Final EA's Length Is Irrelevant To Its Adequacy.

The Staff cites the statement in the Council on Environmental Quality's ("CEQ's") "Forty Most Asked Questions" publication that EAs are "typically in the range of ten to fifteen pages" to argue that, by dint of its greater length (when appendices are included), the final EA must be adequate. See Staff Statement at 19 n.38, 57 n.112; see also Staff Exh. 1: Blevins Testimony at A.34. As the Ninth Circuit emphasized in Friends of the Earth v. Hintz, 800 F.2d 822 (9th Cir. 1986), however, "courts uniformly have held that the CEQ forty questions document is not a regulation, but merely an informal statement and is not controlling authority." Id. at 837 n.15. Unlike the CEQ's regulations, the "Forty Questions" publication is neither binding nor entitled to substantial deference. Id.; cf. Private Fuels Storage, LLC (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340, 348 n.22 (2002) (NRC gives "CEQ regulations ... 'substantial deference'") (emphasis added).

In the more than quarter century since the CEQ issued its "Forty Questions," a substantial body of case law has established the minimum requirements for a legally adequate EA, none of which are related to its length. See Sierra Club v. Marsh, 769 F.2d 868, 875 (1st Cir. 1985)

[3] Notably, the Staff failed to include many of its exhibits in the hearing file, violating its duty under 10 C.F.R. § 2.336(b)(3) to disclose "[a]ll documents ... supporting the NRC staff's review of the application or proposed action that is the subject of the proceeding." See, e.g., Staff Exhs. 30 (NRC and DOE Comparison of Crash Rates), 58 (Scientific Notebook, Kaushik Das). Moreover, as discussed herein, virtually none of the responses to comments provided in the written testimony the Staff submitted with its initial statement were included in the Final EA.

(Breyer, J.) ("simple facts of EA length ... do not by themselves show that the EAs' conclusion – 'no significant impact' – is correct, nor do they show it is incorrect") As detailed in Concerned Citizens' initial statement and herein, the final EA fails to comply with NEPA's command to take a hard look at the impacts associated with Pa'ina's proposed irradiator and at reasonable alternatives that "might be pursued with less environmental harm." Lands Council, 395 F.3d at 1027.

D. Ninth Circuit Case Law Affirms The Staff's Obligation To Respond To Comments On The Draft EA.

The Staff's observation that "[t]he NRC's regulations make circulation of a draft EA and draft FONSI discretionary for the Staff" ignores that, in this proceeding, the Staff was obliged to circulate those documents and receive public comment. Staff Statement at 21. On March 20, 2006, the Staff lodged a stipulation – which, at the Staff's and Concerned Citizens' joint request, the Board subsequently entered as a order – requiring the Staff to "prepare and issue a draft [FONSI] for public review and comment" before making any final decision regarding Pa'ina's proposed irradiator. 3/20/06 Joint Stipulation and Order Regarding Resolution of Concerned Citizens' Environmental Contentions at ¶ 2; see also 4/27/06 Board Order (Confirming Oral Ruling Granting Motion to Dismiss Contentions). The same stipulation also obliged the Staff to "hold at least one public meeting in Honolulu" to accept comment on the draft FONSI. 3/20/06 Joint Stipulation and Order at ¶ 3.

Moreover, while the NRC's and CEQ's NEPA regulations may not "specifically address the manner in which the Staff should reply to public comments," Staff Statement at 22, Ninth Circuit case law is clear that, "[t]o be adequate," the final EA must provide meaningful responses. Sierra Nevada Forest Protection Campaign v. Weingardt, 376 F.Supp.2d 984, 991

(E.D. Cal. 2005); see also Oregon Natural Resources Council Action v. U.S. Forest Service, 445 F.Supp.2d 1211, 1229 (D. Or. 2006) ("the agency must respond to any comments which were addressed to the inadequacy of the [supplemental EAs' ("SEAs'")] alternatives analysis in the course of preparing its supplemental SEAs, or, if it chooses, in new EAs or EISs").[4] The Staff cannot lawfully ignore those comments or "shunt[] [them] aside with mere conclusory statements." Foundation for N. Am. Wild Sheep v. U.S. Dep't of Ag., 681 F.2d 1172, 1179 (9th Cir. 1982). Rather, in the Final EA, the Staff was obliged to respond to comments, including "adverse opinions held by respected scientists" like the experts Concerned Citizens retained. Western Watersheds Project v. Bureau of Land Management, 552 F. Supp. 2d 1113, 1129 (D. Nev. 2008).[5]

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[4] There is no support for the Staff's claim the holding in Oregon Natural Resources Council Action is limited to the facts of that case. See Staff Statement at 73. Rather, the court's holding relied on settled Ninth Circuit precedent that an agency cannot use non-NEPA documents "to present information and analysis that it was required, but ... failed to include in its original NEPA documents." Idaho Sporting Cong. v. Alexander, 222 F.3d 562, 567 (9th Cir. 2000).

[5] While the Staff's counsel speaks disparagingly of Concerned Citizens' experts' credentials, the NRC's actions belie the Staff's litigation position. See, e.g., Staff Statement at 28 (referring to "Intervenor's purported experts"). For example, Dr. George Pararas-Carayannis, who critiqued the Staff's analysis of impacts associated with natural disasters, authored the "Catalog of Tsunamis in Hawaii, Revised and Updated," on which the Center for Nuclear Waste Regulatory Analyses ("CNWRA") relied in preparing the final topical report the Staff used as the basis for its EA. See Concerned Citizens Exh. 5: Final Topical Report on the Effects of Potential Natural Phenomena and Aviation Accidents at the Pa'ina Hawaii, LLC Irradiator Facility at 3-4, 5-3 (ML071280833). Dr. Pararas-Carayannis has also served as a consultant to the NRC on nuclear plant siting, hurricane and hurricane surge effects, and other matters. See Concerned Citizens Exh. 2: Dr. Pararas-Carayannis' resume at 2. Purdue University Professor of Structural Engineering Mete Sozen, who critiqued the Staff's analysis of the consequences of an aviation accident involving Pa'ina's proposed irradiator, likewise has served as a consultant to the NRC, in his case on projects concerned with structural safety and damage. See Concerned Citizens Exh. 2: Professor Sozen's resume at 2.

II. THE STAFF'S FAILURE TO DISCLOSE DURING THE PUBLIC COMMENT PERIOD THE NON-SENSITIVE DATA UNDERLYING THE EA'S ANALYSIS VIOLATED NEPA

The Staff's claim that its belated disclosure of the documents on which it based Appendix B's terrorism analysis somehow cured its failure to release that information during the public comment period, see Staff Statement at 64, ignores the crucial role of public scrutiny in ensuring agencies are "cognizant of all the environmental trade-offs that are implicit in a decision" to allow Pa'ina to construct and operate its proposed irradiator. Block, 690 F.2d at 771; see also 40 C.F.R. § 1500.1(b) ("public scrutiny [is] essential" to ensuring the environmental information available to decision-makers is "of high quality"). As the Ninth Circuit emphasized in San Luis Obispo Mothers for Peace, "that the public cannot access the resulting information does not explain the NRC's determination to prevent the public from contributing information to the decisionmaking process." 449 F.3d at 1034. For public review to serve NEPA's purposes, references like the documents the Staff belatedly released must be "reasonably available for inspection by potentially interested persons within the time allowed for comment." 40 C.F.R. § 1502.21. The Staff cannot cure its prior omission by releasing documents over a year after the close of the public comment period on Appendix B. See 72 Fed. Reg. 31,866 (June 8, 2007) (public comment period on Appendix B closed July 9, 2007).

As detailed in Concerned Citizens' initial statement, if the public had access to these documents during the comment period on the draft EA, it would have had the opportunity to highlight many deficiencies, prompting the Staff to improve upon its analysis, as NEPA intended. See Concerned Citizens Statement at 22-23. The prejudice caused by the Staff's failure to disclose these documents can be cured only by a new comment period on remand, following a Board ruling the Staff violated NEPA.

While some of the information related to the Staff's analysis of terrorism impacts is protected from public disclosure due to the sensitive, security-related matters involved, the same cannot be said of the large volume of information regarding more mundane matters like aviation accidents and natural disasters that the Staff likewise withheld from the public during the comment period on the draft EA and subsequently failed to disclose in the final EA. Had Concerned Citizens not challenged the adequacy of the EA, the Staff would never have disclosed, among other information:

1. the CNWRA's responses to Dr. Marvin Resnikoff's critique of its estimate of the likelihood Pa'ina's proposed irradiator would be involved in an aviation accident (Staff Statement at 28-31; Staff Exh. 2: CNWRA Testimony at A.15-A.17; Staff Exh. 30: NRC and DOE Comparison of Crash Rates);
2. the CNWRA's response to Dr. Resnikoff's claim the Staff needed to quantify the impact of flying airplane and building debris following an aviation accident to determine if sources would be breached (Staff Statement at 31-32; CNWRA Testimony at A.19);
3. the calculations the Staff performed for the potential radiation dose associated with a loss of shielding water from the irradiator pool to the level of the surrounding groundwater (i.e., an eight-foot loss) (Staff Statement at 32-33, 53; Blevins Testimony at A.21);[6]

[6] The final EA discussed only the potential radiation dose associated with a six-foot loss of shielding water, which is more than an order of magnitude less than the potential dose associated with an eight-foot loss. Compare Concerned Citizens Exh. 14: "Microshield Summary Sheet for Loss of 8 Feet of Water Shielding" (run date May 9, 2007) (ML072630315) with Final EA at 9; see also Staff Statement at 53 (admitting calculations of impact of loss of shielding water to the level of the surrounding groundwater were revealed only after EA finalized).

4. the CNWRA's response to Dr. Resnikoff's claim an airplane explosion could remove shielding water from the irradiator pool (Staff Statement at 33; CNWRA Testimony at A.22);
5. the CNWRA's response to Dr. Resnikoff's claim the force of falling airplane or building debris could pulverize Co-60 sources, allowing dispersal of radioactive contamination through a breach in the pool lining (Staff Statement at 34; CNWRA Testimony at A.23-A.24);
6. the CNWRA's response to Dr. Resnikoff's claim the loss of personnel and monitoring equipment from an aviation accident could result in increased radiation exposures to facility personnel and emergency responders (Staff Statement at 35; CNWRA Testimony at A.25);
7. the CNWRA's justification for failing to evaluate tsunami and hurricane-related storm surge runup through numerical modeling and to take into account unique features of Ke'ehi Lagoon that might amplify potential runup (Staff Statement at 38-41; CNWRA Testimony at A.30-A.39);
8. the fluid dynamics calculations the CNWRA performed to evaluate the potential for removal of a Co-60 as the result of a tsunami or hurricane-generated wave (Staff Statement at 38; CNWRA Testimony at A.36; Staff Exhibit 58: K. Das Scientific Notebook);
9. the CNWRA's response to Dr. Pararas-Carayannis' critique of the failure to consider the impact of tsunami- or hurricane-induced flooding, including, but not limited to,

increases in irradiator pool buoyancy (Staff Statement at 39-40, 42-45; CNWRA Testimony at A.35 to A.38);[7]

10. the CNWRA's response to Dr. Pararas-Carayannis' critique of the failure to consider potential focusing effects of seismic energy on O'ahu (Staff Statement at 41; CNWRA Testimony at A.33);
11. the CNWRA's response to Dr. Pararas-Carayannis' critique of the failure to consider the threat of liquefaction (Staff Statement at 42; CNWRA Testimony at A.34);
12. the Staff's explanation for its conclusions regarding likely occupational and public dose rates under situations involving normal operations (Staff Statement at 47-49; Blevins Testimony at A.12-A.11); and
13. the Staff's explanation for its conclusions regarding likely occupational and public dose rates in the event of a loss of shielding water or other accidents (Staff Statement at 53-55; Blevins Testimony at A.19-A.25).

There is no excuse for the Staff's decision to withhold from the public this vital information, which violated NEPA's mandate "that the public receive the underlying environmental data from which [the Staff's experts] derived [their] opinion[s]." ISC I, 137 F.3d at 1150; see also 40 C.F.R. § 1502.21 (material on which Staff's analysis relied must be "reasonably available for inspection by potentially interested persons within the time allowed for comment").

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[7] Dr. Pararas-Carayannis' critique focused on only the Staff's failure to consider the significant increase in "buoyancy pressure at the foundation level ... under hurricane surge [and tsunami-induced] flooding conditions" and the need to perform a "buoyancy assessment of the proposed irradiator pool for various flooding levels ... to ensure the pool (1) will maintain its integrity (i.e., not be breached) and (2) will not tilt, losing vital shielding water and possibly damaging the Cobalt-60 sources." Concerned Citizens Exh. 2: 2/07 Pararas-Carayannis Report at 9; see also id. at 11, 17-18. Dr. Pararas-Carayannis did not suggest flooding could "cause a source to float out of the irradiator pool," as the Staff claims. Staff Statement at 39.

This case is easily distinguished from Western Watersheds Project, which the Staff cites for the proposition that an agency need not "support every assertion in an EA with reference to data, authorities, or explanatory information." Staff Statement at 20. In Western Watersheds Project, the plaintiff had failed to identify "any specific portion of the EA that is not supported by scientific research." 552 F. Supp. 2d at 1129. Here, in contrast, Concerned Citizens' contentions detailed the specific aspects of the EA where the Staff's statements or implicit assumptions are unsupported by reference to any data or calculations.

Moreover, unlike Western Watersheds Project, where "the EA include[d] a lengthy list of references" that led the court to conclude "the EA meets the minimum requirement necessary," the EA for Pa'ina's irradiator failed to give the public any leads to track down the data and analyses on which the Staff now claims it based its conclusions. Id. at 1129-30.[8] Even if the Staff did, in fact, conduct the inquiry it now describes in its testimony and associated exhibits (the adequacy of which Concerned Citizens will address below), its failure to disclose any of this information during the EA process precluded the public scrutiny on which NEPA relies. See 40 C.F.R. § 1500.1(b). Moreover, the Staff's failure to incorporate any details of its analysis in the final EA defeated NEPA's "informational role." Public Citizen, 541 U.S. at 768.

III. THE STAFF'S POST HOC DEFENSE OF THE EA FAILS TO REMEDY THE EA'S DEFICIENCIES

As discussed above, under well-settled Ninth Circuit law, the Board should reject the Staff's post hoc attempts to address the EA's deficiencies, since the EA itself "is where the [Staff's] defense of its position must be found." Blue Mountains Biodiversity Project, 161 F.3d

[8] Notably, even though the Western Watersheds Project court concluded the EA met minimum standards, it still cautioned that, "to avoid possible [NEPA] violations in the future," the defendant agency should "make explicit reference to the scientific and other sources relied upon for conclusions in the environmental document." Id. at 1130.

at 1214. Even if the Board could consider the Staff's testimony, it should still find the Staff failed to comply with NEPA's command to take a hard look at the potential impacts of Pa'ina's proposed irradiator. Like the EA, the Staff's testimony reflects an unlawful reliance on "conclusory statements unsupported by data, authorities, or explanatory information." Western Watersheds Project, 552 F. Supp. 2d at 1129.

Among other things, the Staff asks the Board to accept on its experts' say-so, with no supporting data or calculations, that:

1. "it is not feasible that a helicopter or seaplane would cause the type of accident that might damage the Pa'ina irradiator pool or sources" (CNWRA Testimony at A.16);[9]

2. "it is simply not feasible that airplane or building debris would simultaneously pierce the steel-and-concrete pool liner below the water table and damage the sources to the extent where Co-60 could escape through the breach in the liner," (CNWRA Testimony at A.19);[10]

[9] The CNWRA staff asserts its conclusion relies on "numerous factors," such as "size, weight, fuel capacity and flight speed," but does not actually present any analysis of those factors. Id.; see also Resnikoff Testimony at 2.

[10] Had the CNWRA staff performed the necessary calculations, it would have found it requires little force to pierce the irradiator pool liner, allowing vital shielding water to escape. Resnikoff Testimony at 3 & Exh. 22; cf. Asarco, Inc. v. United States Environmental Protection Agency, 616 F.2d 1153, 1160 (9th Cir.1980) ("to determine whether the agency took into consideration all relevant factors," reviewing court may "look[] outside the record to determine what matters the agency should have considered but did not"); Animal Defense Council v. Hodel, 840 F.2d 1432, 1436 (9th Cir. 1988) (inquiry outside record appropriate "to explain technical terms or complex subject matter involved in the agency action").

3. "[i]f the debris pierces the pool liner, it will not thereafter have sufficient force to damage a source" (CNWRA Testimony at A.19);[11]

4. "even if debris struck a source and the source's encapsulation was breached, the source would remain intact" and, thus, "no radioactive material would be released into the environment" (CNWRA Testimony at A.19);[12]

5. "[i]t is not foreseeable that an aircraft would explode directly above the irradiator pool" (CNWRA Testimony at A.22);[13]

6. "if the liner were breached below the water table, the pool would refill with ten feet of water" (CNWRA Testimony at A.22);[14]

7. in the event of a fuel fire following an aviation accident, "water evaporation would be minimal" and "dose rates would not increase significantly" (CNWRA Testimony at A.22);

8. even if all water were removed from the irradiator pool, "doses to workers very near the edges of the pool would not increase significantly" (id.);[15]

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[11] Dr. Resnikoff's calculations demonstrate that, in fact, the impact associated with an aviation accident would far exceed the standards applicable to the Co-60 sources Pa'ina proposes to use. Resnikoff Testimony at 3-4 & Exh. 23.

[12] As Dr. Resnikoff notes, the CNWRA staff "simply has not performed the calculations necessary to back up [its] assertions." Resnikoff Testimony at 4.

[13] As discussed in Dr. Resnikoff's testimony, the CNWRA staff had no basis for reaching this conclusion based on the mere fact "there has not been an aircraft explosion anywhere at [Honolulu International Airport] in at least 45 years." Id.; see also Resnikoff Testimony at 5-6 & Exh. 27.

[14] The CNWRA staff's analysis relies on unsubstantiated assumptions about the speed with which groundwater would refill the pool through a breach in the pool liner. See Resnikoff Testimony at 6.

[15] On a related note, even though the CNWRA conceded that removal of all water from the pool would result in "a high dose of radiation emitted," it never quantifies what that dose would be. Id.

9. "[e]ven if a projectile fell directly into the pool, the water in the pool would stop or slow the projectile so that it would not damage the plenum to the point that the source would be crushed" (id. at A.23);

10. "[i]t is not feasible that an engine component would fall into the pool, exert enough energy to breach the pool liner, and thereafter fall to the bottom of 18 feet of water with enough energy to significantly damage the sources" (id. at A.24);

11. "[i]t is highly unlikely the component would be moving fast enough to breach the pool liner" (id. at A.24); and

12. in the event of major flooding, there would not "be an increase in buoyancy sufficient to cause the pool to lift and tilt, thereby spilling water" (id. at A.38).

These mere "narratives of expert opinions," bereft of supporting data or calculations, are "inadequate" to satisfy NEPA. Klamath-Siskiyou Wildlands Center, 387 F.3d at 996.

The Staff's failure to back up its "generalized conclusory statements that the effects are not significant" is most striking when the Staff concedes the potential for radiation exposures and then fails to quantify those potential impacts. Id. To justify its FONSI, the EA relies on the Staff's assertion that, even if an aviation accident or natural disaster caused vital shielding water to escape from the irradiator pool, any increased dose rate would be "in a well collimated beam directly above the pool," avoiding any "significant environmental effect on the area surrounding the proposed facility." Final EA at 9. The CNWRA staff acknowledges, however, "the possibility of skyshine," which would result in "radiation scattered from the [well collimated] beam," raising the obvious question what those increased radiation doses might be. CNWRA

Testimony at A.20.[16] Rather than perform the necessary calculations to quantify the extent to which skyshine would result in increased radiation exposures, the CNWRA staff baldly asserts it "would be minimal." CNWRA Testimony at A.20. "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." Klamath-Siskiyou, 387 F.3d at 994 (quoting Neighbors of Cuddy Mountain v. United States Forest Service, 137 F.3d 1372, 1380 (9th Cir 1998)). If it is possible objectively to quantify an impact, NEPA requires that the agency do so. Id. The Staff failed to comply with this mandate.

In addition to containing conclusory statements, the testimony the Staff proffers to address the EA's deficiencies is grounded in assumptions that fly in the face of common sense and experience. For example, the Staff's claim irradiator personnel and emergency responders would not be exposed to the beam of high-level radiation emitting from the pool following a loss of shielding water assumes that, in the wake of an accident or natural disaster, responders would at all times remain back from the edge of the pool and would never bend over the 42-inch lip. See Staff Exh. 25: Schematic Collimated Beam; Resnikoff Testimony at 4. These are completely unrealistic assumptions since irradiator personnel and emergency responders would be inspecting the irradiator for damage and seeking to restore the shielding water, activities that inevitably would involve exposures to the collimated beam. Resnikoff Testimony at 4.

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[16] Since (1) a loss of shielding water to the level of the surrounding water table would result in a dose at the floor level greater than 14 rem/hour, (2) the maximum dose for members of the public is only 0.1 rem/year, (3) an individual standing next to the irradiator pool following a loss of shielding water to the level of groundwater would exceed the maximum dose for members of the public in less than 26 seconds, and (4) emergency responders are considered "members of the public" for purposes of regulating radiation exposures, the potential for excessive doses from "skyshine" is clear. See Resnikoff Testimony at 5 & Exh. 26; 10 C.F.R. §§ 20.1003 (definition of "member of the public"), 20.1301(a)(1), (b) (dose limits for individual members of the public).

Furthermore, the CNWRA's analysis assumes the irradiator lip would remain intact following a catastrophic aviation accident. As Gray*Star Vice President and Chief Operating Officer Russell N. Stein previously explained, however, the pool lip is made of only ¼-inch stainless steel and is designed to be "sacrificial" in a disaster scenario. Concerned Citizens Exh. 24: 3/5/07 Stein Decl. at 6. Following an aviation accident, there likely would be no lip to block any portion of the collimated beam, which consequently would be substantially wider than as depicted in the Staff's schematic. See Concerned Citizens Exh. 25: Modified Schematic Collimated Beam.[17] Anyone approaching the pool following an accident would likely be exposed to excessive radiation. See Resnikoff Testimony at 5 & Exh. 26.[18] "[P]lain common sense indicate[s] that it was hardly 'reasonable' for [the Staff] to conclude, without further study, that the environmental impact of [such accidents would] be insignificant." City of Davis v. Coleman, 521 F.2d 661, 675 (9th Cir. 1975).

The CNWRA staff made similarly illogical assumptions in assessing situations in which increased buoyancy from flooding or liquefaction in an earthquake causes the irradiator pool to tilt. The CNWRA staff acknowledges that, even if such natural disasters did not cause the irradiator pool to rupture, the tilting alone could allow vital shielding water to escape. CNWRA Testimony at A.31, A.34. It nonetheless asserts that, since the sources would remain "partially shielded by water, ... there would be no radiological impact." Id. at A.34.

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[17] Even if the pool lip somehow survived the impact of the crash, the CNWRA staff fail to justify its assumption no additional radiation would pass through the ¼-inch lip, resulting in heightened radiation exposures. Resnikoff Testimony at 5.

[18] If the shielding water were to drain to the level of the surrounding water table, the dose at floor level would be greater than 14 rem/hour. Id. In only twenty-two minutes, any irradiator personnel on the scene would be subjected to more than the annual occupational dose limit of 5,000 millirem/year. Id. Emergency responders – who, as noted above, are considered members of the public for regulatory purposes – would exceed the 0.1 rem/year maximum dose in less than 26 seconds. Id.

The CNWRA staff ignores that, if the irradiator pool were to tilt, the collimated beam of radiation would no longer point primarily skyward. Resnikoff Testimony at 7. Rather, as the pool tilts, the beam would be directed increasingly parallel to the ground, increasing the risk of exposing facility personnel and emergency responders to the increased levels of radiation resulting from the loss of shielding water. Id.; see also Concerned Citizens Exh. 28: Schematic Collimated Beam with Tilting. Because the CNWRA staff neglected this logical consequence of tilting, it failed to perform any calculations regarding the potential change in angle of the collimated beam due to tilting of the pool or to quantify the potential radiation doses that facility personnel or emergency responders exposed to that modified beam might receive, rendering completely unsubstantiated its assertion there is no potential for radiological impact. Resnikoff Testimony at 7.

In reviewing the Staff's EA, the Board must make a "searching and careful" inquiry to ensure the Staff's decision is "founded on a reasoned evaluation 'of the relevant factors.'" Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 378 (1989) (quoting Citizens to Preserve Overton Park v. Volpe, 401 U.S. 402, 416 (1971)). The testimony the Staff submitted with its initial statement is neither reasoned nor considers all relevant factors, since it fails to support with hard data its conclusory assertions regarding vital issues and ignores real world factors threatening excessive radiation exposures in the event of a loss of shielding water. It falls far short of providing the requisite hard look at potential impacts.

IV. THE STAFF UNLAWFULLY FAILED TO BACK UP ITS SPECULATION THE IRRADIATOR WOULD NOT IMPACT TOURISM

Even if the Board could properly look beyond the EA for evidence the Staff took a hard look at tourism-related impacts, the testimony of former Office of Nuclear Materials Safety and

Safeguards Senior Project Manager Matthew Blevins would not cure the EA's deficiencies. See 40 C.F.R. § 1508.8 (agency must consider economic and social impacts, "whether direct, indirect, or cumulative"). Review of Mr. Blevins' resume reveals he has no education, background or other expertise that would enable him to perform a reliable analysis of the potential economic and social impacts resulting from a disruption of tourism. See Staff Exh.4. The Board therefore has no basis to conclude his uninformed assessment of those impacts satisfied the Staff's obligation to provide "'a convincing statement of reasons' ... why [Pa'ina's] project's impacts are insignificant." Blue Mountains Biodiversity Project, 161 F.3d at 1212 (quoting Save the Yaak Comm. v. Block, 840 F.2d 714, 717 (9th Cir. 1988)).

In addition, there is no indication Mr. Blevins actually performed any rigorous analysis of the issue; his testimony suggests he simply eyeballed the situation and wrote down whatever struck him as sensible. See Blevins Testimony at A.26. NEPA requires far more than that, mandating agencies to "identify any methodologies used and ... make explicit reference by footnote to the scientific and other sources relied upon for [their] conclusions." Western Watersheds Project, 552 F. Supp. 2d at 1129. Even if Mr. Blevins possessed the necessary expertise (and he does not), his unsupported, "generalized conclusory statements that the effects are not significant" would not pass muster. Klamath-Siskiyou Wilderness Center, 387 F.3d at 996.

Apparently recognizing the deficiencies of Mr. Blevins' analysis, the Staff argues that, even if inadequate, it is immaterial because NEPA does not require examination of "a psychological factor that is not connected to any environmental impact." Staff Statement at 56. While the Staff may have limited its inquiry to the potential that "tourists may choose not to visit Hawaii because of the fear of an accident involving Pa'ina's irradiator," that is only one aspect

of the issue. Id. Many public comments on the draft EA focused on the potential disruption of Hawai'i's main economic engine – tourism – in the event of an accident at Pa'ina's irradiator that forced the closure of runways at Honolulu International Airport, the primary gateway to the state. See, e.g., Concerned Citizens Exh. 2: 2/8/07 Earthjustice Letter at 6 ("accident [involving Pa'ina's irradiator] would have significant economic impacts, disrupting the major port of entry to the entire state of Hawai'i"); Exh. 10: 7/6/07 Resnikoff Report at 5 ("A closure of vital runways could ... disrupt Hawai'i's main economic engine, tourism"); Exh. 29: 2/1/07 Transcript at 87:20-88:17 (raising concerns about threats to "billion dollar tourist business" in event of "accidents, leaks, spills, et cetera"). Since there would be a "close causal relationship between a change in the physical environment" resulting from an accident involving Pa'ina's irradiator that shut down runways at Honolulu International Airport and the social and economic impacts from disrupting Hawai'i's tourist trade, the Staff was obliged to take a hard look at those potential impacts in its EA. Metropolitan Edison Co. v. People Against Nuclear Energy, 460 U.S. 766, 774 (1984). It failed to do so.

V. THE STAFF WAS REQUIRED TO ADDRESS TRANSPORTATION IMPACTS IN THE EA

This Board has already squarely rejected the Staff's claim it "was not required to analyze transportation impacts" in the EA for Pa'ina's proposed irradiator because such impacts "have already been considered" in other NEPA reviews, including a generic EIS ("GEIS") the NRC prepared in 1977. Staff Statement at 57-58. In admitting Concerned Citizens' amended safety contention 3, the Board noted that "[n]either the draft nor the final EA cite this GEIS, much less summarize in the final EA the issues and reasoning of the generic study as is required when incorporating such environmental documents." 12/21/07 Board Order (Ruling on Admissibility

of Intervenor's Amended Environmental Contentions) at 18-19. The Staff gives the Board no reason to question its earlier decision, which is well-grounded in NEPA's requirements.

As the Board correctly concluded in its earlier order, the mere existence of an EIS discussing potential impacts from transportation of radioactive materials would not, as the Staff asserts, excuse its failure to address such impacts in the final EA. While NEPA allows agencies to "tier" environmental analyses, to comply with the tiering regulations, the final EA would have had to "summarize the issues discussed in the broader statement and incorporate statements from the broader statement by reference," concentrating on the transportation-related issues specific to Pa'ina's proposed irradiator. 40 C.F.R. § 1502.20; see also id. § 1508.28. The final EA did not do this. It made no mention of either of the EISs the Staff now invokes (not even in the references), failed to disclose the calculations and data underlying its conclusion that "[t]ransportation impacts from normal operations would be small," and included no discussion at all of transportation impacts from abnormal operations (i.e., accidents). Final EA at 8 (emphasis added).

The draft EA likewise was silent regarding the EISs the Staff now claims are relevant, which means that, during the public comment period, the public, including Concerned Citizens, was unaware of their existence and alleged relevance to evaluating Pa'ina's proposal. See Concerned Citizens Exh. 1: Draft EA at 8. Consequently, no one was in a position to comment on whether either EIS adequately analyzes issues related to transporting Cobalt-60 to and from Hawai'i. Because NEPA recognizes the vital role the public plays in ensuring agencies do not sweep important considerations under the rug, if the Staff had intended to rely on these EISs, it was required to state, in the draft EA, "where the earlier document[s were] available." 40 C.F.R. § 1502.20. Likewise, the NRC's guidance for preparing EAs provides that "[t]he new

environmental document must identify the document from which it is tiered and both documents must be available for public review." NUREG-1748, § 1.6.2. The Staff failed to comply with any of these requirements.

The Staff's other justification for failing to address transportation impacts – that transportation of Co-60 sources to allow Pa'ina's irradiator to operate allegedly does not constitute a "connected action" – is equally unsupported. As the Board previously observed:

> Because the Applicant's proposed facility cannot operate without regular shipments of Co-60 sources, the transportation of the radioactive sources shipped to and from the facility, along with the transportation accidents that are an inevitable fact of life, appear to be connected and intertwined actions whose potential impacts may need to be examined in the final EA.

12/21/07 Board Order at 18. Again, the Board's original legal reasoning is sound.

NEPA requires the Staff to include within the scope of its environmental review all actions "connected" to the activity for which Pa'ina seeks a license. 40 C.F.R. § 1508.25(a)(1). In this case, Pa'ina's proposed facility cannot operate without regular shipments of Co-60 sources. See Final EA at 8. Those Co-60 shipments would not occur if there were no irradiator to receive them, and, likewise, the irradiator "would not be built but for the contemplated [shipments of Co-60 sources]." Thomas v. Peterson, 753 F.2d 754, 758 (9th Cir. 1985). The transportation of radioactive material to and from the proposed irradiator is "inextricably intertwined" with the operation of the facility, making them "'connected actions' within the meaning of [NEPA's] regulations," whose potential impacts the Staff was obliged to, but failed to, examine in the EA. Id. at 759.

The Staff's argument that "the comprehensive regulatory schemes in 10 C.F.R. Part 71 and 49 C.F.R. Parts 171-179 obviously have 'independent utility'" is a legal non sequitur. Staff Statement at 60-61. The question is not whether the regulatory schemes governing shipments of radioactive materials would cease to function if Pa'ina's irradiator were not built, but, rather,

whether the specific shipments necessary to operate the irradiator would travel from their origin in Canada (if from MDS Nordion) or England (if from REVISS Services) to and from Honolulu, subject to "the transportation accidents that are an inevitable fact of life." 12/21/07 Board Order at 18; see also Staff Exh. 10: 6/20/05 Pa'ina Application for Material License at 3 (identifying source manufacturers). Clearly, they would not. These actions are "connected" for the common sense reason "that it would be irrational, or at least unwise, to undertake the first phase" – construction of the irradiator – "if subsequent phases" – transportation of fresh sources to the facility and removal of depleted sources – "were not also undertaken." Northwest Resources Information Center v. Oregon Natural Resources Council, 56 F.3d 1060 (9th Cir. 1995) (quoting Trout Unlimited v. Morton, 509 F.2d 1276, 1285 (9th Cir. 1974)). Since the construction and operation of the irradiator and the transportation of Co-60 sources "present a 'links in the same bit of chain' scenario," the Staff was obliged to consider transportation impacts in the EA. Id.

VI. THE EA FAILED TO SATISFY NEPA'S MANDATE TO ANALYZE REASONABLE ALTERNATIVES

While the Ninth Circuit may not demand that an EA consider any minimum number of alternatives, it has held that NEPA requires "an appropriate explanation ... as to why an alternative was eliminated." Native Ecosystems Council v. United States Forest Service, 428 F.3d 1233, 1246 (9th Cir. 2005). In this case, the EA failed even to mention alternate locations for Pa'ina's proposed irradiator or the use of a non-nuclear, electron-beam irradiator, much less provide "an appropriate explanation" why the Staff refused to consider these alternatives. The EA leaves members of the public concerned about Pa'ina's proposed irradiator completely in the dark regarding why the Staff refused to evaluate these alternatives, defeating Congress' intent in enacting NEPA to "put on the table, for the [NRC's] and the public's view, a sufficiently detailed

statement of environmental impacts and alternatives so as to permit informed decision making." Lands Council, 395 F.3d at 1027.

Even if the Board could properly consider the Staff's post hoc arguments about why it declined to evaluate these alternatives, it should still find the Staff violated NEPA's command to consider in its EA "all possible approaches to a particular project .... which would alter the environmental impact and the cost-benefit balance." Bob Marshall Alliance v. Hodel, 852 F.2d 1223, 1228 (9th Cir. 1988), cert. denied, 489 U.S. 1066 (1989).[19] The Staff cannot rely on Pa'ina's preference to operate a Co-60 irradiator at the Honolulu airport location to justify its refusal to consider alternatives involving a non-nuclear irradiator technology and locations farther from active runways and the ocean. See Save Our Cumberland Mountains, 453 F.3d at 345 (NEPA "prevents federal agencies from effectively reducing the discussion of environmentally sound alternatives to a binary choice between granting or denying an application."). Whether the Board follows the Seventh Circuit's approach as set out in Van Abbema v. Fornell, 807 F.2d 633, 638 (7th Cir. 1986) ("the evaluation of 'alternatives' mandated by NEPA is to be an evaluation of alternative means to accomplish the general goal of an action; it is not an evaluation of the alternative means by which a particular applicant can reach his goals") or the D.C. Circuit's approach in Citizens Against Burlington v. Busey, 938 F.2d 190,

[19] Save Our Cumberland Mountains v. Kempthorne, 453 F.3d 334 (6th Cir. 2006), does not, as the Staff claims, establish a broad rule that an EA need not discuss alternatives as long as "it is obvious from the administrative record that the agency considered those alternatives in its decisionmaking process." Staff Statement at 67. Noting its "reluctan[ce] to excuse procedural violations of a procedural statute," the Sixth Circuit found the unique facts before it – in which the EA "identified considerable other information that normally would fall under the heading of 'alternatives'" – made the case "one of those rare instances in which it is appropriate." Save Our Cumberland Mountains, 453 F.3d at 348 (emphasis added). To the extent Save Our Cumberland Mountains does not require an EA to consider "all reasonable alternatives" and provide "an appropriate explanation ... as to why an alternative was eliminated," it is inconsistent with binding Ninth Circuit precedent. Native Ecosystems Council, 428 F.3d at 1246.

199 (D.C. Cir. 1991) (an agency "must evaluate alternative ways of achieving [the applicant's] goals"), it is clear NEPA requires the Staff to evaluate different ways to achieve "the purposes of the project." Trout Unlimited v. Morton, 509 F.2d 1276, 1286 (9th Cir. 1974); see also Hydro Resources, Inc., CLI-01-04, 53 NRC 31, 55 (2001) (reasonable alternatives are ones that "satisfy the goals of the project"). The EA broadly defines the project's purposes as "satisfy[ing] several needs related to the control of invasive pest species:"

- Centrally located treatment of Hawaiian products for export,
- Centrally located treatment of products for import to Hawaii,
- Sterilization of fruit fly pupae for preventative release programs, and
- Use as a research tool.

Final EA at 6. These purposes are broadly defined and do not dictate consideration of only one technology and one location, which is effectively all the EA evaluated.[20]

A. Failure To Analyze Alternate Locations

In defending its refusal to consider alternate locations for Pa'ina's proposed irradiator, the Staff claims "[t]here is typically no requirement that an agency consider alternative sites in an EA." Staff Statement at 69. The sole authority the Staff offers for that proposition is Wicker Park Historic Dist. Preservation Fund v. Pierce, 565 F. Supp. 1066 (N.D. Ill. 1982), a district court case from outside the Ninth Circuit that has not been cited for that proposition by any court since the opinion was issued over a quarter century ago. Eight years after Wicker Park was

[20] With respect to location, this case is easily distinguished from Hydro Resources, in which the Commission found it was proper, in identifying reasonable alternatives for a proposed in situ leach mining project, to take into account the locations where the applicant "owns land" and "the ore body is located." CLI-01-04, 53 NRC at 55. Pa'ina not only does not own the land where it proposes to locate its irradiator, but has not yet even secured a lease for the property. Concerned Citizens Exh. 30: 9/8/08 Pa'ina Lease Update. Moreover, the record makes clear there are alternate sites where Pa'ina could locate its irradiator, including ones that might have "commercial advantages" over the currently proposed site. Concerned Citizens Exh. 20: 8/28/06 Email from Michael Kohn (Pa'ina) to Jack Whitten (NRC) at 1 (ML062770248).

decided, the same district court held that, even where an EA concludes "the impact upon the environment will not be significant, the agency nevertheless is required to consider feasible alternative sites to determine whether an alternative site might serve the agency's purpose with even less environmental impact." Village of Palatine v. United States Postal Service, 742 F. Supp. 1377, 1386 (N.D. Ill. 1990) (emphasis added). The Village of Palatine court further held "[t]he evaluation of alternatives mandated by section 102(2)(E) is an evaluation of alternative means to reach a general goal" and requires evaluation of "alternative sites." Id. at 1392. Thus, Wicker Park's holding does not even hold sway in the Northern District of Illinois.

In cases from both the Ninth Circuit and other circuits, courts routinely examine EAs to determine whether they have adequately considered a reasonable range of alternate sites. See, e.g., Morongo Band of Mission Indians v. Federal Aviation Admin., 161 F.3d 569, 575-76 (9th Cir. 1998) (alternate routes for airplanes flying into Los Angeles International Airport); Friends of Endangered Species v. Jantzen, 760 F.2d 976, 987-88 (9th Cir. 1985) (alternate sites for proposed development); Lee v. United States Air Force, 354 F.3d 1229, 1239-40 (10th Cir. 2004) (alternate locations for basing training aircraft); South Carolina v. O'Leary, 64 F.3d 892, 899-900 (4th Cir. 1995) (alternate sites for storage of spent nuclear fuel rods); North Carolina v. Federal Aviation Admin., 957 F.2d 1125, 1134-35 (4th Cir. 1992) (alternate locations for Navy targets); Monarch Chemical Works, Inc. v. Thone, 604 F.2d 1083, 1088 (8th Cir. 1979) (alternate sites for prison). None of these cases suggests an agency can refuse to consider alternate sites merely because an EA, rather than an EIS, is being prepared.

The Staff then asserts that, even if "Section 102(2)(E) could be interpreted as requiring an agency to consider alternative locations in certain circumstances, there was no need for the Staff to do so here," since it "did not find any significant environmental impact that might result

from operating Pa'ina's irradiator at the proposed site." Staff Statement at 75. Not surprisingly, the Staff finds no authority to support this proposition. By definition, any EA that does not trigger the preparation of an EIS involves a situation in which the agency has concluded there is no possibility of a significant impact. Blue Mountains Biodiversity Project, 161 F.3d at 1216 (EIS required "whenever 'substantial questions are raised was to whether a project may cause significant [environmental] degradation"). The Ninth Circuit has made clear that "consideration of alternatives is critical to the goals of NEPA even where a proposed action does not trigger the EIS process." Bob Marshall Alliance, 852 F.2d at 1228-29. As discussed above, even if "the impact upon the environment will not be significant, the agency nevertheless is required to consider feasible alternative sites to determine whether an alternative site might serve the [project's] purpose with even less environmental impact." Village of Palatine, 742 F. Supp. at 1386. The Staff unlawfully failed to do so here.

B. Failure To Analyze Alternate Technologies.

The Staff's claim the few lines the EA devotes to methyl bromide fumigation and heat treatment – the only alternate quarantine control technologies the EA mentions – "thoroughly considered" those alternatives begs the question what, in the Staff's mind, would constitute an inadequate analysis. Staff Statement at 71. The EA's cursory mention of these control technologies provides no information, for example, quantifying the potential impact on the Earth's ozone layer of the quantities of methyl bromide that would be needed to treat Hawaiian fruits or identifying any potential adverse effects associated with the use of heat treatment. The EA's alternatives analysis fails to provides any basis to assess how adopting those approaches in lieu of the proposed Co-60 irradiator "would alter the environmental impact and the cost-benefit

balance," defeating the very purpose of considering alternatives. Bob Marshall Alliance, 852 F.2d at 1228.

Implicitly recognizing the deficiency of its analysis, the Staff now claims it "ultimately determined that these alternatives would not meet the purpose of the proposed action," a statement that appears nowhere in the EA. Staff Statement at 71. Since the EA itself "is where the [Staff's] defense of its position must be found," the Board should refuse to consider this post hoc argument. Blue Mountains Biodiversity Project, 161 F.3d at 1214.

Even if the Board were to reach the merits of the Staff's newly minted claim, it should reject it. While methyl bromide and heat treatment may not be appropriate for all fruits Pa'ina might want to treat, an agency cannot "disregard alternatives merely because they do not offer a complete solution to the problem." Natural Resources Defense Council v. Hodel, 865 F.2d 288, 296 n.4 (D.C. Cir. 1988) (Bader Ginsberg, J.); see also City of Carmel-by-the-Sea v. U.S. Dep't of Trans., 123 F.3d 1142, 1159 (9th Cir. 1997) (agency must consider alternatives that do not "fulfill[] all goals completely"). The extent to which an alternative can accomplish the project's goals is merely one factor in selecting the best course of action. See Natural Resources Defense Council, 865 F.2d at 296 n.4.[21]

The Staff's claim that the only two alternate control technologies the EA mentioned were "inappropriate for Pa'ina's intended use" serves only to highlight the impropriety of its failure to discuss in the EA the only alternate technology it knew "could be used on the types of fruits for which Pa'ina plans to use the Co-60 irradiator, with results similar to those from gamma

[21] The EA fails to identify the "certain Hawaiian tropical fruits" that cannot be treated with methyl bromide or analyze the percentage of the total product volume Pa'ina plans to treat that such fruits represent; deficiencies that render it impossible to assess the extent to which using methyl bromide would limit accomplishing the project's goals. Final EA at 12. Whether the difference between using methyl bromide and Co-60 irradiation in accomplishing the stated goals is de minimus or significant is never discussed.

radiation:" an electron-beam irradiator. Staff Statement at 72. The EA's lack of "an appropriate explanation ... as to why [the electron-beam irradiator] alternative was eliminated" is fatal. Native Ecosystems Council, 428 F.3d at 1246; see also Soda Mountain Wilderness Council v. Norton, 424 F. Supp. 2d 1241, 1264 (E.D. Cal. 2006) ("For those alternatives not selected for detailed study [in an EA], the agency is required to 'briefly discuss the reasons for their having been eliminated'").

Having failed to mention the electron-beam irradiator alternative in its EA, the Staff now tries to make up for the deficiency with a post hoc description of the "extensive research on the use of electron-beam irradiation" it allegedly conducted while developing the EA. Staff Statement at 72. Its untimely explanation cannot cure the omission since the failure to disclose its reasoning during the public comment period on the EA precluded the "public scrutiny" that is "essential to implementing NEPA." 40 C.F.R. § 1500.1(b).[22] Moreover, as noted previously, "the [Staff's] defense of its position must be found" in the EA itself, not in testimony submitted long after the Final EA's issuance. Blue Mountains Biodiversity Project, 161 F.3d at 1214; see also Motor Vehicle Manuf. Ass'n v. State Farm Mut. Auto. Insur. Co., 463 U.S. 29, 50 (1983) ("an agency's action must be upheld, if at all, on the basis articulated by the agency itself").

Even if the Board were to consider the Staff's extra-record testimony, it is clear the Staff did not rigorously explore the electron-beam irradiator alternative. According to Mr. Blevins,

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[22] In his testimony, Mr. Blevins claims that, "at the time [he] was researching alternatives for purposes of the EA, there were still numerous articles questioning whether the electron-beam technology had long-term viability." Blevins Testimony at A.31. He further asserts his "subsequent research" confirmed "an electron-beam irradiator would generate more recurring costs for electricity than a cobalt irradiator." Id. Since the Staff has not disclosed any of the articles or other research on which Mr. Blevins purportedly based his analysis, there still is no way for the public to scrutinize the Staff's analysis. Accordingly, even if it were appropriate to consider the Staff's post hoc testimony, it still falls far short of satisfying NEPA, which "requires that the public receive the underlying environmental data from which [the Staff's experts] derived [their] opinion[s]." ISC I, 137 F.3d at 1150.

the only person he contacted for information on alternatives was Pa'ina's president, Michael Kohn. Blevins Testimony at A.31. Accepting an applicant's alternatives analysis "at face value" does not satisfy the Staff's obligation to take a "hard look" at alternatives. North Anna, CLI-07-27, 66 NRC at 230.

To satisfy its duty to take a hard look at the electron-beam technology, the Staff should have, at a minimum, contacted representatives from Hawaii Pride, the company that has been successfully operating a commercial, electron-beam irradiator on the island of Hawai'i since 2000. See Weinert Testimony at 1-2. Had it done so, the Staff would have received important information debunking its erroneous assumptions about the cost-effectiveness and feasibility of this alternate technology. See Asarco, 616 F.2d at 1160 (reviewing court may "look[] outside the record to determine what matters the agency should have considered but did not"); Animal Defense Council, 840 F.2d at 1437 (extra-record evidence proper in NEPA case where plaintiff alleges agency "failed adequately to discuss some reasonable alternative"). As discussed in the testimony of Eric Weinert, Hawaii Pride's vice-president, SureBeam's bankruptcy in 2004 did not affect in any way the ability of a company like Pa'ina to acquire a reliable electron-beam irradiator. Weinert Testimony at 3.[23] Moreover, Mr. Kohn's claims that electricity costs render the electron-beam technology economic infeasible are unfounded. Even with far higher electricity costs on Hawai'i Island (as compared to O'ahu), Hawaii Pride's electron-beam irradiator has consistently made a profit, even when operating at only fifteen percent of capacity. Id.

[23] Since the Staff had never previously disclosed its reasons for refusing to consider the electron-beam irradiator alternative, prior to service of the Staff's initial statement, Concerned Citizens had no way to know what expert testimony was necessary to rebut the Staff's claims. See 12/21/08 Board Order at 30 n.106 (noting "the Staff in the final EA neither mentioned the electron beam technology nor explained why it did not consider that alternative").

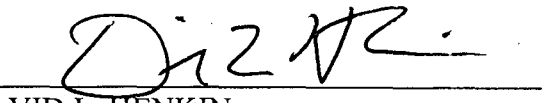
Even without talking to Mr. Weinert, the Staff had no valid reason to omit from its EA discussion of an electron-beam irradiator alternative. The fact that a commercial electron-beam irradiator has been operating in Hawai'i since 2000, performing the precise tasks Pa'ina seeks to undertake, establishes this non-nuclear technology as a reasonable alternative the Staff was obliged to – but failed to – analyze in its EA.

VII. CONCLUSION

Concerned Citizens respectfully submits that, when the Board "consider[s] the purposes that NEPA was designed by Congress to serve," it should conclude "what was done here is inadequate." Lands Council, 395 F.3d at 1027. As discussed herein and in Concerned Citizens' initial statement, the Staff failed to comply with NEPA's command to "put on the table, for the [NRC's] and the public's view, a sufficiently detailed statement of environmental impacts and alternatives so as to permit informed decision making" regarding Pa'ina's proposed irradiator. Id.

Dated at Honolulu, Hawai'i, September 16, 2008.

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

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	)	
	)	

WRITTEN REBUTTAL TESTIMONY AND
DECLARATION OF MARVIN RESNIKOFF, Ph.D.

I, Dr. Marvin Resnikoff, declare under penalty of perjury that the contents of the following Written Rebuttal Testimony and Declaration of Marvin Resnikoff, Ph.D. are true and correct to the best of my knowledge:

Q: Please state your name, occupation, employer, and business address.

A: My name is Marvin Resnikoff. I am a physicist with a Ph.D. in high-energy theoretical physics from the University of Michigan and also the Senior Associate of Radioactive Waste Management Associates (RWMA), a private technical consulting firm based in New York City. Our offices are located at 526 West 26th Street, Room 517, New York, NY 10001.

I have researched radioactive waste issues for over 30 years and have extensive experience and training in the field of nuclear waste management, storage, and disposal. RWMA works, among other areas, primarily on three subjects: transportation and storage of radioactive waste and materials, radiation induced injuries, and decontamination and site remediation of radioactively contaminated facilities. A copy of my resume is attached to this testimony as Exhibit "21."

Q: Please briefly describe your background as it relates to your review of Pa'ina Hawaii, LLC's application for a material license to operate a Cobalt-60 irradiator.

A: I have considerable training and experience in the field of risk assessment involving nuclear and hazardous facilities, serving as an expert witness in numerous personal injury cases in which I estimated radiation doses and the likelihood these exposures caused cancer. These cases involved uranium mining and milling, oil pipe cleaning, X-rays, thorium contamination and other issues. This work involved the use of computer codes,

such as CAP88PC, RADTRAN, RESRAD, RISKIND, MILDOS and HOTSHOT, and spreadsheets employing dose conversion factors, to estimate radiation doses. I investigated the Genesis irradiator licensed by CFC Logistics, Inc. (Docket No. 030-36239) and prepared affidavits in support of the Petitioner's Areas of Concern and Motion for a Stay. I also toured the irradiator licensed by CFC Logistics, Inc., whose design is almost identical to the design proposed for the Pa'ina Hawaii irradiator. The Co-60 suppliers are also the same.

I previously assisted a local group in Dickerson, MD regarding Neutron Products, Inc., a company that processed Co-60 into specific forms for irradiation devices.

Q: Are you familiar with the Nuclear Regulatory Commission ("NRC") Staff's Initial Statement of Position on Amended Environmental Contentions 3 and 4, which was filed in the Pa'ina Hawaii, LLC licensing proceeding on August 26, 2008?

A: I have reviewed the Staff's Testimony of James Durham, Amitava Ghosh, John Stamatakos, and Kaoshik Das, which discusses, among other things, reports I prepared evaluating the deficiencies of the Center for Nuclear Waste Regulatory Analysis ("CNWRA's") draft and final topical reports for Pa'ina's proposed irradiator, as well as the Staff's environmental assessment ("EA") for that proposed facility.

Q: At this time, please turn your attention to page 18 of Dr. Ghosh's testimony, in which he states "it is not feasible that a helicopter or seaplane would cause the type of accident that might damage the Pa'ina irradiator pool or sources." Do you agree with Dr. Ghosh's conclusion?

A: Dr. Ghosh provides no basis for his conclusion. As with so many aspects of the CNWRA topical report, there are no data or calculations provided that would allow one to make an independent, informed assessment of whether Dr. Ghosh was justified in excluding the potential for impact by the seaplanes and helicopters that use Honolulu International Airport from his analysis of the likelihood the proposed Pa'ina irradiator would be involved in an aviation accident.

The maps of the airport included in the CNWRA final topical report (Concerned Citizens Exhibit "5;" Staff Exhibit "14") as Figures 2-2 through 2-5 clearly show the "Seaplane Landing Area" immediately adjacent to the proposed location for Pa'ina's irradiator. Why Dr. Ghosh assumes an accident involving a seaplane striking the proposed irradiator would not cause any damage is a mystery, since he presents no calculations to demonstrate the factors he enumerates – e.g., size, weight, fuel capacity and flight speed – would ensure against adverse impacts. His unsubstantiated assertions would never stand up to peer review.

Q: I now turn your attention to page 16 of Dr. Ghosh's testimony, in which he concedes that "it is possible that airplane or building debris could fall into the irradiator pool" in the event of an aviation accident, but claims "it is simply not feasible that airplane or building debris would simultaneously pierce the steel-and-concrete pool liner below the

water table and damage the sources to the extent where Co-60 could escape through the breach in the liner." Dr. Ghosh then states that, "even if debris struck a source and the source's encapsulation was breached, the source would remain intact" and, thus, "no radioactive material would be released into the environment." Do agree with those assessments?

A: No. Once again, Dr. Ghosh is making assertions without the benefit of any data or calculations to back them up. Neither Dr. Ghosh nor anyone else at the CNWRA has performed the necessary analysis to determine whether, in the event of an aviation accident involving Pa'ina's proposed irradiator, the pool liner might be breached and the Co-60 sources destroyed. As noted above, unsubstantiated assertions of the type Dr. Ghosh makes in his testimony would not withstand peer review.

Unlike Dr. Ghosh, I have performed calculations, in the context of Concerned Citizens' amended safety contention 7, that show an aviation accident an aviation accident could damage the pool structure under the floor level, with the impact of airplane or building debris tearing the welds or puncturing the pool liner, resulting in loss of irradiator pool shielding water. My calculations, which are attached as Exhibit "22," analyze the velocity at which a jet engine commonly used in commercial aviation (GE model CF6-80C2) would pierce the pool liner (which consists of only six inches of concrete sandwiched between ¼-inch steel), allowing shielding water to escape. My analysis demonstrates the engine would have to travel at only 38.5 miles per hour to breach the liner.

Commercial airplanes commonly land and take-off at 160 miles per hour. Thus, it is clearly plausible that an aviation accident would result in the engine striking the pool liner at speeds far in excess of 38.5 miles per hour.

Since the irradiator facility's floor level is also the minimum water level necessary to retain shielding integrity for the Co-60 sources, a breach of the pool structure due to an airplane crash would reduce the irradiator's passive shielding. The CNWRA final topical report states (at page 1-2) the depth of the water table is 2.4 meters (8 feet) below the facility floor, and, thus, its assertion that sea water infiltrating through a breach would adequately shield the Co-60 sources is unsupported. In fact, any break in the pool lining below the floor level could reduce the shielding of the sources, exposing emergency personnel to radiation in the building, or whatever remains of the building, after an airplane crash.

Dr. Ghosh also failed to perform any calculations to assess the potential for contamination of the pool water in the event that an airplane crash breaches the sources. While the final topical report asserts that Co-60 sources that can satisfy the criteria set forth in 10 C.F.R. § 36.21 and ANSI test 65646 would be robust enough to survive an aviation accident, CNWRA never performed any calculations to back up that claim. For example, the report does not quantify the impact of flying airplane debris or building girders following a collision to allow a comparison with the impact associated with a 2.5 cm-diameter, 20-kg steel weight dropped from a height of 1 meter, the more stringent of

the two impact standards. It is not intuitive that an exploding airplane would exert no more force on the irradiator's sources than a weight falling from the height of a tabletop.

Unlike Dr. Ghosh, I performed calculations, which are attached hereto as Exhibit "23," that show the impact associated with an aviation accident would far exceed the standards the Co-60 sources must meet. For the purposes of these calculations, I assumed that a commercial jet engine (GE model CF6-80C2) was dropped onto the sources from 18.5 feet, the height of the water in the pool, and had no additional velocity. This is a very conservative assumption since, in an airplane crash, the engine would fall from a much greater height. Taking into account the buoyancy of the pool water (which, prior to the impact, would not yet have drained out), the energy imparted by a commercial jet engine falling from the top of the irradiator pool would be over 7,500 times the energy imparted by a 20-kg weight falling from a height of one meter, the standard applicable to the sources Pa'ina proposes to use. The impact would be far greater if the jet engine fell from a height greater than the top of the irradiator pool, as would undoubtedly be the case in any aviation accident involving the facility.

My analysis makes clear that, in the event of an aviation accident, the forces that would be applied to the Co-60 sources would be many orders of magnitude beyond those for which the sources were designed. Having failed to perform any of his own calculations, Dr. Ghosh has no basis for asserting the impact of airplane debris could not rupture the source encapsulation. Moreover, Dr. Ghosh failed to perform any analysis of whether the forces involved might shatter the sources themselves, contaminating the pool water, which could then escape the facility though ruptures in the pool lining, spreading radioactive contamination to the groundwater and nearby Ke'ehi Lagoon. He simply has not performed the calculations necessary to back up his assertions.

Q: I now turn your attention to the page 17 of the CNWRA testimony, where Dr. Durham states that, even if debris from an aviation accident pierced the irradiator pool, allowing the level of the shielding water to drop eight feet, the "only part of the environment affected would be the open air above the irradiator." Do you agree with Dr. Durham's assessment?

A: No. Dr. Durham's analysis is based on a number of faulty assumptions, which immediately become apparent when you look at Staff Exhibit "25," which Dr. Durham says provides a representation of a collimated beam depicted over a cross-sectional drawing of the irradiator pool. First, to arrive at his conclusion that a six-foot tall person standing next to the irradiator pool would remain outside the collimated beam, avoiding an elevated radiation dose, he assumes the person remains back from the edge of the pool and does not bend over the 42" pool lip. Neither is a realistic assumption for irradiator personnel or emergency responders, who would be inspecting the irradiator for damage following an aviation accident and seeking to restore the shielding water. Such activities inevitably would involve exposures to the collimated beam.

Second, Dr. Durham incorrectly assumes the irradiator lip would remain intact following a catastrophic aviation accident. As Gray*Star Vice President and Chief Operating

Officer Russell N. Stein explained in his March 5, 2007 declaration, an excerpt of which is attached as Exhibit "24," the pool lip is made of only ¼" stainless steel and is designed to be "sacrificial" in a disaster scenario. Following an aviation accident, there likely would be no lip to block any portion of the collimated beam, which would be substantially wider than as depicted in the Staff's schematic.

Attached hereto as Exhibit "25" is a modified schematic showing the width of the beam without the irradiator lip. Anyone approaching the pool following an accident would likely be exposed to excessive radiation. My calculations, attached as Exhibit "26," show that, if the shielding water were to drain to the level of the surrounding water table, the dose at floor level would be greater than 14 rem/hr. In only twenty-two minutes, any irradiator personnel on the scene would be subjected to more than the annual occupational dose limit of 5,000 millirem/year. Emergency responders – who, for regulatory purposes, are considered members of the public – would exceed the 100 millirem/year maximum dose in less than 26 seconds.

Third, even if the irradiator pool lip were somehow to survive an aviation accident, Dr. Durham is simply wrong in suggesting no additional radiation would pass through the ¼" stainless steel lip. As with other sections of his testimony, he has failed to support his assertions with detailed calculations.

Finally, Dr. Durham implicitly concedes that "skyshine" – radiation scattered from the beam – could affect individuals outside the well-collimated beam. While he asserts such radiation "would be minimal," he provides no calculations that would allow any independent review to assess the accuracy of this claim.

Q: Now please turn your attention to page 18 of the CNWRA testimony, where Dr. Durham claims "[i]t is not foreseeable that an aircraft would explode directly above the irradiator pool." Do you agree with Dr. Durham's statement?

A: No. While I agree with Dr. Durham that it is highly unlikely an airplane in flight would suddenly explode right above Pa'ina's proposed irradiator, that is not the scenario I posited in my reports and prior testimony. Rather, I challenged the Staff's failure to consider the possible consequences of an airplane exploding upon, or immediately following, impact with the irradiator facility, an entirely different situation. Should an air crash occur, a fire and explosion are quite likely.

Dr. Durham touches on that scenario only briefly, noting that none of the fatal aircraft crashes at Honolulu International Airport in the past 45 years involved an explosion. From that limited data set, Dr. Durham reaches the false conclusion that an explosion is not plausible.

From a statistical perspective, given that aviation accidents are not common events, the fact that Honolulu International Airport has not experienced an accident resulting in an explosion in the past 45 years is not surprising. That does not, however, mean Dr. Durham was justified to dismiss such events as implausible event. While not a daily

occurrence, such accidents do happen. Indeed, just a few months ago, an Airbus crashed in the Sudan, exploding after landing. A New York Times article describing the accident is attached hereto as Exhibit "27." Likewise, both airplanes involved in the attacks on the World Trade Center in 2001 exploded upon impact.

The aircraft that use Honolulu airport are not immune to the risk of explosion upon impact. Dr. Durham has no justification for failing to quantify the risk of such an event involving Pa'ina's proposed irradiator.

Q: At the bottom of page 18, Dr. Durham claims that, even if an explosion did remove water from the irradiator pool, any tear in the liner below the water table would allow the pool to refill with ten feet of water. Do you agree with his analysis?

A: No. Dr. Durham's analysis – none of which, it is worth pointing out, was presented in the final topical report – relies on unsubstantiated assumptions about the speed with which groundwater would refill the pool through a breach in the pool liner. He has provided no data or calculations to support his assertion that groundwater would quickly provide shielding water displaced by the force of an explosion.

In addition, even if inflows of groundwater did refill the pool, Dr. Durham ignores that a drop in shielding water to the level of surrounding groundwater still poses threats of excessive radiation exposures to irradiator personnel and emergency responders. As discussed previously, emergency responders would receive excessive doses in less than 26 seconds.

Q: Please turn your attention now to pages 24 to 25 of the CNWRA testimony, in which Dr. Durham states that, even if the irradiator were to tilt on its side due to increased buoyancy following flooding from hurricane surge or tsunami inundation, allowing shielding water to escape from the irradiator pool, there would be no potential for harm. Similarly, on page 28 of the CNWRA testimony, Dr. Stamatakos states that, "[e]ven assuming that liquefaction [during an earthquake] were to occur, this would at most result in the irradiator pool being pushed out of the ground and tilted, causing some [shielding] water to spill," but would not result in "radiological impact." Do you agree with these statements?

A: No. As discussed previously, the irradiator facility's floor level is also the minimum water level necessary to retain shielding integrity for the Co-60 sources and ensure against excessive radiation exposures. The CNWRA staff never analyzes the potential for the pool lining to breach in the event buoyancy forces or liquefaction cause the pool to tilt, allowing vital shielding water to escape.

In addition, even if the pool lining remained intact, any loss of shielding water from tilting would result in increased radiation exposures, which the CNWRA staff never quantifies.

Finally, the CNWRA staff ignores that, if the irradiator pool were to tilt, the collimated beam of radiation would no longer point primarily skyward. Rather, as the pool tilts, the beam would be directed increasingly parallel to the ground, increasing the risk of exposing facility personnel and emergency responders to the increased levels of radiation resulting from the loss of shielding water. Attached hereto as Exhibit "28" is a schematic showing the way in which tilting would re-direct the collimated beam of radiation.

Neither Dr. Durham nor Dr. Stamatakos performed any calculations regarding the potential change in angle of the collimated beam due to tilting of the pool. Moreover, they failed to quantify the potential radiation doses of facility personnel or emergency responders exposed to that modified beam. Accordingly, they have no basis for asserting there is no potential for radiological impact.

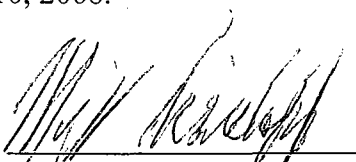
Q: Does this conclude your testimony?

A: Not entirely. I want to note there are numerous ways in which the CNWRA staff's testimony mischaracterizes my analysis of the likelihood that Pa'ina's irradiator would be involved in an aviation accident. However, since the odds of an aviation accident are extremely high even under CNWRA staff's analysis, which arrived at the same order of magnitude of risk as I did, I have focused on the CNWRA staff's complete failure to substantiate with data and calculations their analysis of the potential consequences of an aviation accident.

Having clarified that point, I conclude my testimony.

I declare under penalty of perjury that I have read the foregoing Written Rebuttal Testimony and Declaration of Marvin Resnikoff, Ph.D. and know the contents thereof to be true of my own knowledge.

Dated at New York, New York, September 10, 2008.



MARVIN RESNIKOFF, Ph.D.

Resume of Marvin Resnikoff, Ph.D.

Dr. Marvin Resnikoff is Senior Associate at Radioactive Waste Management Associates and is an international consultant on radioactive waste management issues. He is Principal Manager at Associates and is Project Director for dose reconstruction and risk assessment studies of radioactive waste facilities and transportation of radioactive materials. Dr. Resnikoff has concentrated exclusively on radioactive waste issues since 1974. He has conducted studies on the remediation and closure of the leaking Maxey Flats, Kentucky radioactive landfill for Maxey Flats Concerned Citizens, Inc. and of the leaking uranium basin on the NMI/Starmet site in Concord, Massachusetts under grants from the Environmental Protection Agency. He also conducted studies of the Wayne and Maywood, New Jersey thorium Superfund sites and proposed low-level radioactive waste facilities at Martinsville (Illinois), Boyd County (Nebraska), Wake County (North Carolina), Ward Valley (California) and Hudspeth County (Texas). He investigated phosphogypsum plants in Florida, Texas and Alberta, Canada, and served as an expert witness in a personal injury case involving a Texas phosphogypsum worker. He has also served as an expert witness for CRPE, a public interest groups, regarding the proposed expansion of the Buttonwillow, California NORM landfill. He has conducted several studies of transportation accident risks and probabilities for the State of Nevada and several counties in Nevada (Lander, Churchill, Clark) and California (Inyo) and dose reconstruction studies of oil pipe cleaners in Mississippi and Louisiana, residents of Canon City, Colorado near a former uranium mill, residents of West Chicago, Illinois near a former thorium processing plant, and residents and former workers at a thorium processing facility in Maywood, New Jersey. In West Chicago he calculated exposures and risks due to thorium contamination and served as an expert witness for plaintiffs A Muzzey, S Bryan, D Schroeder and assisted counsel for plaintiffs KL West and KA West. He is presently serving as an expert witness for plaintiffs in Karnes County, Texas, Milan, NM and Uravan, CO, who were exposed to radioactivity from uranium mining and milling activities and for former workers and residents at the ITCO oil pipe cleaning yard in Louisiana. He also evaluated radiation exposures and risks in worker compensation cases involving G Boeni and M Talitsch, former workers at Maywood Chemical Works thorium processing plant. He served as an expert witness for a public interest group in the licensing of a food irradiator in Milford Township, Pennsylvania. In June 2000, he was appointed to a Blue Ribbon Panel on Alternatives to Incineration by DOE Secretary Bill Richardson.

In March 2004, Dr. Resnikoff was project director and co-author of a study of groundwater contamination at DOE facilities, *Danger Lurks Below.* He also authored or co-authored books on transporting radioactive fuel (*The Next Nuclear Gamble*) for the Council on Economic Priorities, and on DOE facilities (*Deadly Defense*) and low-level waste facilities (*Living Without Landfills*) for the Radioactive Waste Campaign.

In February 1976, assisted by four engineering students at State University of New York at Buffalo, Dr. Resnikoff authored a paper that, according to *Science*, changed the direction of power reactor decommissioning in the United States. His paper showed that power reactors could not be entombed for long enough periods to allow the radioactivity to decay to safe enough levels for unrestricted release. The presence of long-lived radionuclides meant that large volumes of decommissioning waste would still have to go to low-level or high-level waste disposal facilities. He assisted public interest groups on the decommissioning of the Yankee-Rowe, Diablo Canyon,

EXHIBIT 21

Big Rock Point and Haddam Neck reactors. He served as an expert witness for the Town of Wiscasset, Maine, on a case involving property assessment of a dry storage facility.

Under a contract with the State of Utah, Dr. Resnikoff is a technical consultant to DEQ on the proposed dry cask storage facility for high-level waste at Skull Valley, Utah and proposed storage/transportation casks. He is assisting the State on licensing proceedings before the Nuclear Regulatory Commission. In addition, at hearings before state commissions and in federal court, he has investigated proposed dry storage facilities at the Point Beach (WI), Prairie Island (MN), Palisades (MI) and Maine Yankee reactors. He has also prepared studies on transportation risks and consequences for the State of Nevada and Clark and White Pine Counties.

In Canada, he conducted studies on behalf of the Coalition of Environmental Groups and Northwatch for hearings before the Ontario Environmental Assessment Board on issues involving radioactive waste in the nuclear fuel cycle and Elliot Lake tailings and the Interchurch Uranium Coalition in Environmental Impact Statement hearings before a Federal panel regarding the environmental impact of uranium mining in Northern Saskatchewan. He also worked on behalf of the Morningside Heights Consortium regarding radium-contaminated soil in Malvern and on behalf of Northwatch regarding decommissioning the Elliot Lake tailings area before a FEARO panel. He conducted a study for Concerned Citizens of Manitoba regarding transportation of irradiated fuel to a Canadian high-level waste repository.

He was formerly Research Director of the Radioactive Waste Campaign, a public interest organization conducting research and public education on the radioactive waste issue. His duties with the Campaign included directing the research program on low-level commercial and military waste and irradiated nuclear fuel transportation, writing articles, fact sheets and reports, formulating policy and networking with numerous environmental and public interest organizations and the media. He is author of the Campaign's book on "low-level" waste, *Living Without Landfills*, and co-author of the Campaign's book, *Deadly Defense, A Citizen Guide to Military Landfills*.

Between 1981 and 1983, Dr. Resnikoff was a Project Director at the Council on Economic Priorities, a New York-based non-profit research organization, where he authored the 390-page study, *The Next Nuclear Gamble, Transportation and Storage of Nuclear Waste*. The CEP study details the hazard of transporting irradiated nuclear fuel and outlines safer options.

Dr. Resnikoff is an international expert in nuclear waste management, and has testified often before State Legislatures and the U.S. Congress. He has extensively investigated the safety of the West Valley, New York and Barnwell, South Carolina nuclear fuel reprocessing facilities. His paper on reprocessing economics (Environment, July/August, 1975) was the first to show the marginal economics of recycling plutonium. He completed a more detailed study on the same subject for the Environmental Protection Agency, "Cost/Benefits of U/Pu Recycle," in 1983. His paper on decommissioning nuclear reactors (Environment, December, 1976) was the first to show that reactors would remain radioactive for hundreds of thousands of years. In January 2004, a book

on groundwater contamination at DOE facilities he investigated will be released by ANA, a consortium of public interest groups residing near DOE facilities.

Dr. Resnikoff has prepared reports on incineration of radioactive materials, transportation of irradiated fuel and plutonium, reprocessing, and management of low-level radioactive waste. He has served as an expert witness in state and federal court cases and agency proceedings. He has served as a consultant to the State of Kansas on low-level waste management, to the Town of Wayne, New Jersey, in reviewing the cleanup of a local thorium waste dump, to WARD on disposal of radium wastes in Vernon, New Jersey, to the Southwest Research and Information Center and New Mexico Attorney General on shipments of plutonium-contaminated waste to the WIPP facility in New Mexico and the State of Utah on nuclear fuel transport. He has served as a consultant to the New York Attorney General on air shipments of plutonium through New York's Kennedy Airport, and transport of irradiated fuel through New York City, and to the Illinois Attorney General on the expansion of the spent fuel pools at the Morris Operation and the Zion reactor, to the Idaho Attorney General on the transportation of irradiated submarine fuel to the INEL facility in Idaho and to the Alaska Attorney General on shipments of plutonium through Alaska. He was an invited speaker at the 1976 Canadian meeting of the American Nuclear Society to discuss the risk of transporting plutonium by air. As part of an international team of experts for the State of Lower Saxony, the Gorleben International Review, he reviewed the plans of the nuclear industry to locate a reprocessing and waste disposal operation at Gorleben, West Germany. He presented evidence at the Sizewell B Inquiry on behalf of the Town and Country Planning Association (England) on transporting nuclear fuel through London. In July and August 1989, he was an invited guest of Japanese public interest groups, Fishermen's Cooperatives and the Japanese Congress Against A- and H- Bombs (Gensuikin).

Between 1974 and 1981, he was a lecturer at Rachel Carson College, an undergraduate environmental studies division of the State University of New York at Buffalo, where he taught energy and environmental courses. The years 1975-1977 he also worked for the New York Public Interest Group (NYPIRG).

In 1973, Dr. Resnikoff was a Fulbright lecturer in particle physics at the Universidad de Chile in Santiago, Chile. From 1967 to 1973, he was an Assistant Professor of Physics at the State University of New York at Buffalo. He has written numerous papers in particle physics, under grants from the National Science Foundation. He is a 1965 graduate of the University of Michigan with a Doctor of Philosophy in Theoretical Physics, specializing in group theory and particle physics.

Dr. Marvin Resnikoff

Radioactive Waste Management Associates
526 West 26th Street, Room 517
New York, NY 10001
(212)620-0526 FAX (212)620-0518

241 W. 109th St, Apt. 2A
New York, NY 10025
(212) 663-7117

EXPERIENCE:

April 1989 - present **Senior Associate**, Radioactive Waste Management Associates, management of consulting firm focused on radioactive waste issues, evaluation of nuclear transportation and military and commercial radioactive waste disposal facilities.

1978 - 1981; 1983 - April 1989 **Research Director**, Radioactive Waste Campaign, directed research program for Campaign, including research for all fact sheets and the two books, *Living Without Landfills*, and *Deadly Defense*. The fact sheets dealt with low-level radioactive waste landfills, incineration of radioactive waste, transportation of high-level waste and decommissioning of nuclear reactors. Responsible for fund-raising, budget preparation and project management.

1981 - 1983 **Project Director**, Council on Economic Priorities, directed project which produced the report *The Next Nuclear Gamble*, on transportation and storage of high-level waste.

1974 - 1981 **Instructor**, Rachel Carson College, State University of New York at Buffalo, taught classes on energy and the environment, and conducted research into the economics of recycling of plutonium from irradiated fuel under a grant from the Environmental Protection Agency.

1975 - 1976 **Project Coordinator**, SUNY at Buffalo, New York Public Interest Research Group, assisted students on research projects, including project on waste from decommissioning nuclear reactor.

1973 **Fulbright Fellowship** at the Universidad de Chile, conducting research in elementary particle physics.

1967 - 1972 **Assistant Professor of Physics**, SUNY at Buffalo, conducted research in elementary particle physics and taught range of graduate and undergraduate physics courses.

1965 - 1967 **Research Associate**, Department of Physics, University of Maryland, conducted research into elementary particle physics.

EDUCATION

University of Michigan
Ann Arbor, Michigan

PhD in Physics, June 1965
M.S. in Physics, Jan 1962
B.A. in Physics/Math, June 1959

Concrete Penetration

$t_p = (U/V)^{0.25}(MV^2/DP_c)^{0.5}$

t_p = perforation thickness into concrete (ft)	0.5
U = reference velocity (fps)	200
V = missile impact velocity (fps)	
M = missile mass (slugs)	312.5
D = missile diameter (ft)	1.5
P_c = ultimate compressive strength (psi)	576000

V = 13.36 fps 9.108486

tp = 0.499757 ft

Steel Penetration

$T^{1.5} = (0.5MV^2)/(17400*K_s*D^{1.5})$

Where T = penetration depth in steel (inches)	0.5
M = missile mass (slugs)	312.5
Ks = constant, depending on steel grade	1
D = missile diameter (inches)	18

V = 54.83357 fps 37.38652 mph

T = 0.499827

V = 56.43745 fps 38.48008 mph

EXHIBIT 22

v = sq rt (2*g*h)

v =	48.48	ft/sec	14.78	m/sec

Energy

$E = 0.5*m*v^2$

E =	10.00 joules	ANSI standard
	185000 ft-lb	engine falling 18.5 ft
	250675 joules	

Taking into account buoyancy

56705.57 ft-lb	engine falling 18.5 ft
76836.04 joules	

Use engine volume to determine buoyancy

engine volume	931017 cubic inches
	15256635 cc
	15256.64 kg water
	6934.834 lb

EXHIBIT 23

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

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

DECLARATION OF RUSSELL N. STEIN
IN RESPONSE TO
THE DECLARATION AND REPORT OF MARVIN RESNIKOFF, February 9, 2007;
THE DECLARATION AND REPORT OF METE SOZEN, February 8, 2007;
THE DECLARATION AND REPORT OF CHRISTOPH HOFFMAN, February 7, 2007;
THE DECLARATION AND REPORT OF GEORGE PARARAS-CARAYANNIS, February 9, 2007

Under penalty of perjury, I, Russell N. Stein, hereby declare that:

(1) I am the Vice President and Chief Operating Officer of GRAY*STAR, Inc. ("GRAY*STAR") at 200 Valley Rd., Ste. 103, Mt. Arlington, New Jersey.

(2) I have been in the irradiator industry for over 28 years and am considered a leading irradiator designer. I have specific experience designing several irradiators, two of which have been built and licensed by the NRC. Not only have I designed irradiators, but I have also operated irradiators as an Irradiator Operator, Radiation Safety Officer and Manager. I have never been cited for an item of non-compliance by the

EXHIBIT 24

well under extreme impact, the shock of the impact could affect the welds and cause the pool to breach, allowing the water to drain out." This statement clearly indicates that Sozen/Hoffmann misread the engineering drawings of the irradiator and its installation.

Although referred to as an underwater irradiator, the Genesis is actually an underground irradiator. By design the "minimum water level" was defined in the Application as floor level. Physical protection to the sources from various disaster scenarios is primarily provided by the below ground design of the pool, its installation and the surrounding concrete/earth. The above ground portion of the pool (42" above floor level) performs two functions not related to radiation safety. First, it provides a rail as required in 10CFR36. 42" is the height specified by OSHA to protect people from accidentally falling into the pool. Second, the above ground "lip" is used to contain water from the pool as it is displaced by the bells when lowered, preventing the water from leaving the pool system. In a disaster scenario, the above ground portion of the pool is designed to be sacrificial. [Note: The above ground "lip" is made of ¼" stainless steel. It does not contain concrete, nor does it contain structural I-beams.] Neither the initial Application filed in 2005, nor NRC reports

I declare under penalty of perjury that the factual information provided above is true and correct to the best of my knowledge and belief, and that the professional opinions expressed above are based on my best professional judgment.

Executed at Morris Township, New Jersey, on this 5th day of March, 2007.

Russell N. Stein
Vice President
GRAY*STAR, Inc.

Subscribed and sworn before me on this 5th day of March, 2007.

Notary Public, State of New Jersey

My Commission Expires _____

MARY ANN CONOVER
NOTARY PUBLIC OF NEW JERSEY
MY COMMISSION EXPIRES FEB. 10, 2012

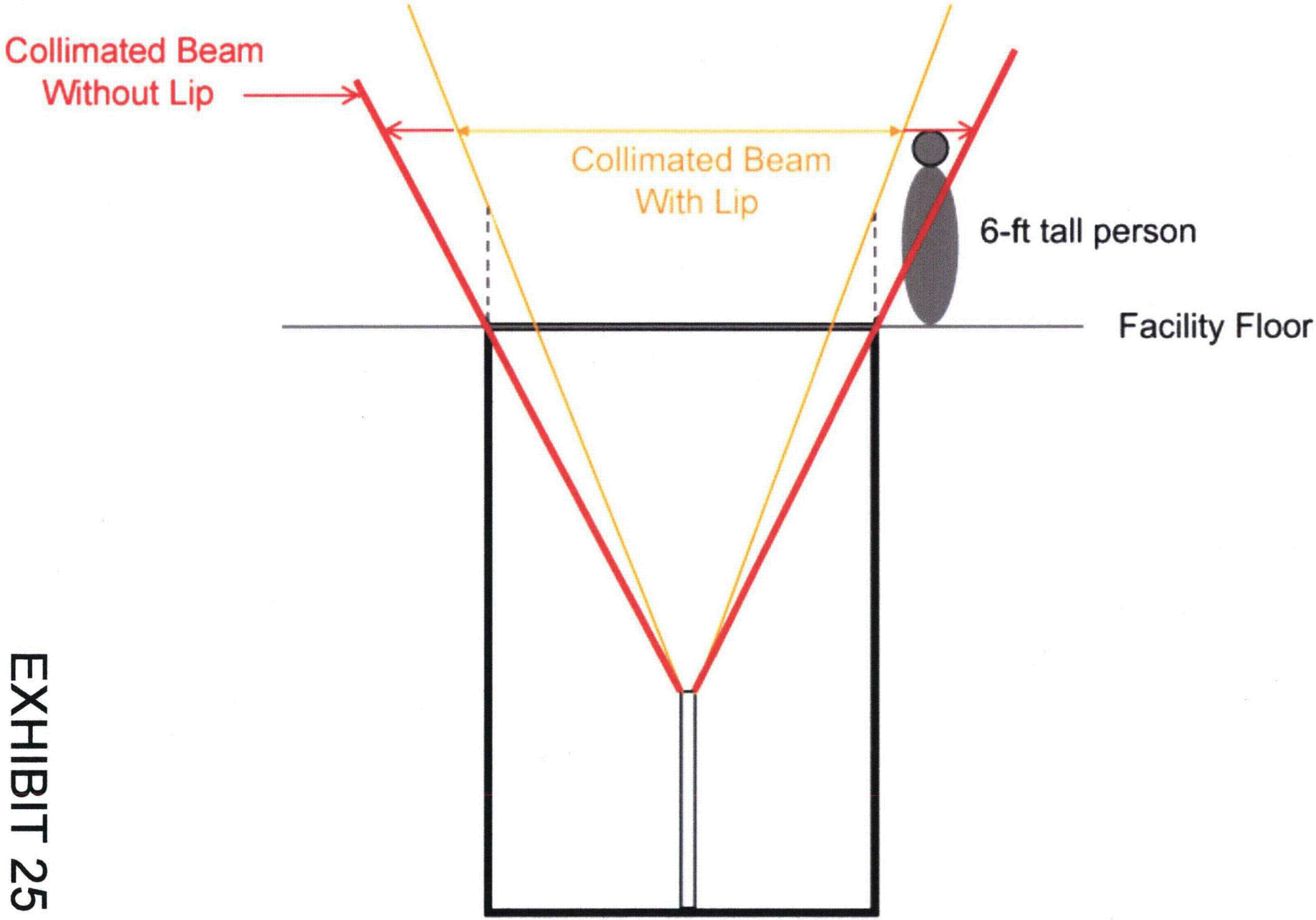

Collimated Beam
Without Lip
Collimated Beam
With Lip
6-ft tall person
Facility Floor

EXHIBIT 25

Line Source

$$\phi = \frac{S}{4\pi h} 2\theta$$

$$\tan(\theta) = \left(\frac{L/2}{h}\right)$$

S L=	7.8E+16	photons/sec
φ =	4.9058E+10	photons/cm2/s
	6.1323E+10	MeV/cm2/sec
	107315.27	R/h at bldg flr

where h is distance pool floor to bldg floor
L is width of plenum (cm)
S is photons/sec/cm
φ is photon flux (photons/cm2/sec)

Point Source

$$R \cong 0.53CEn$$

distance pool floor to bldg floor	18.50	ft		R/h at 1 m
top plenum 82"	6.83	ft		
water shield, pool filled	11.67	ft	C=# Ci	
			E energy	
water shield, 6' water drop	5.67	ft	(MeV)	
water shield, 8' water drop	3.67	ft		
				R/h at bldg
water shield, 6' water drop	172.82	cm	104723.52	flr
water shield, 8' water drop	111.86	cm		

EXHIBIT 26

Gamma Attenuation

$$I = bI_0 e^{-\mu x}$$

where b = buildup factor

I_o = initial gamma flux

μ = linear attenuation coefficient

x = absorber thickness

I_6= attenuation 6' water shield

I_8= attenuation 8' water shield

$$I_8 / I_6 = \left(\frac{b_8}{b_6}\right) e[\mu(x_6 - x_8)]$$

μ=6.323E-2 cm2/g 6.32E-02

1.09E+01

$\left(\frac{b_8}{b_6}\right)$ 0.605364 7.07E+00

3.85E+00

I_8 / I_6 47.21

14.16 R/h at bldg flr

The New York Times
nytimes.com

June 11, 2008

Plane Crash at Airport in Sudan Kills 28

By REUTERS

KHARTOUM, Sudan (Reuters) — A Sudan Airways plane burst into flames after landing at Khartoum airport on Tuesday, killing at least 28 of the 217 people on board, the head of the airport's medical services said.

Maj. Gen. Muhammad Osman Mahjoub said that the authorities had counted 123 survivors, and that 66 people were unaccounted for.

Sudanese television showed film of the aircraft ablaze in the darkness while emergency workers aimed water hoses on the burning fuselage. The airliner, identified by the broadcaster as an Airbus, was carrying 203 passengers and 14 crew members.

"The operation to recover bodies from the plane is going on now," the police deputy director general, Al Adel Ajeb, told Sudan Television.

One passenger said the plane, which had flown from Amman, Jordan, had tried to land at Khartoum airport "but then the captain told us we couldn't land because of bad weather."

He said they then flew to the Red Sea city of Port Sudan before returning to Khartoum an hour later. When the plane "tried to land there was a crash," the passenger told Sudan Television.

At the time of the landing, a dust storm in the Sudanese capital was restricting visibility, residents said.

Another survivor, Al Hajj Bashir, said the landing in Khartoum was "not normal" and described "an explosion in the right wing" two or three minutes after the plane landed.

Mabrouk Mubarak Salim, minister of state for transportation, said there was an explosion in the right side of the engine. "So far we don't have precise information but we think the weather is a main reason for what happened," he said.

At its height, the fire, which was later put out, appeared to be consuming the fuselage and

EXHIBIT 27

cockpit. Television pictures showed emergency escape chutes deployed at the side of the blazing aircraft. Ambulances drove on to the tarmac.

The civil aviation spokesman said the pilot was slightly injured and all but one of the crew members had been found alive.

"The task of counting the survivors has been complicated because in the alarm and confusion they dispersed and some of them seem to have left the airport area," he added.

The airport director, Yusuf Ibrahim, told Sudanese television the cause of the fire, including whether there was a "technical reason," was not clear.

The plane was coming from Damascus, Syria, by way of Amman, Jordan, Mr. Ibrahim said. "It landed safely at Khartoum airport and they talked to the control tower which told them where to taxi," he said. "At this moment an explosion happened."

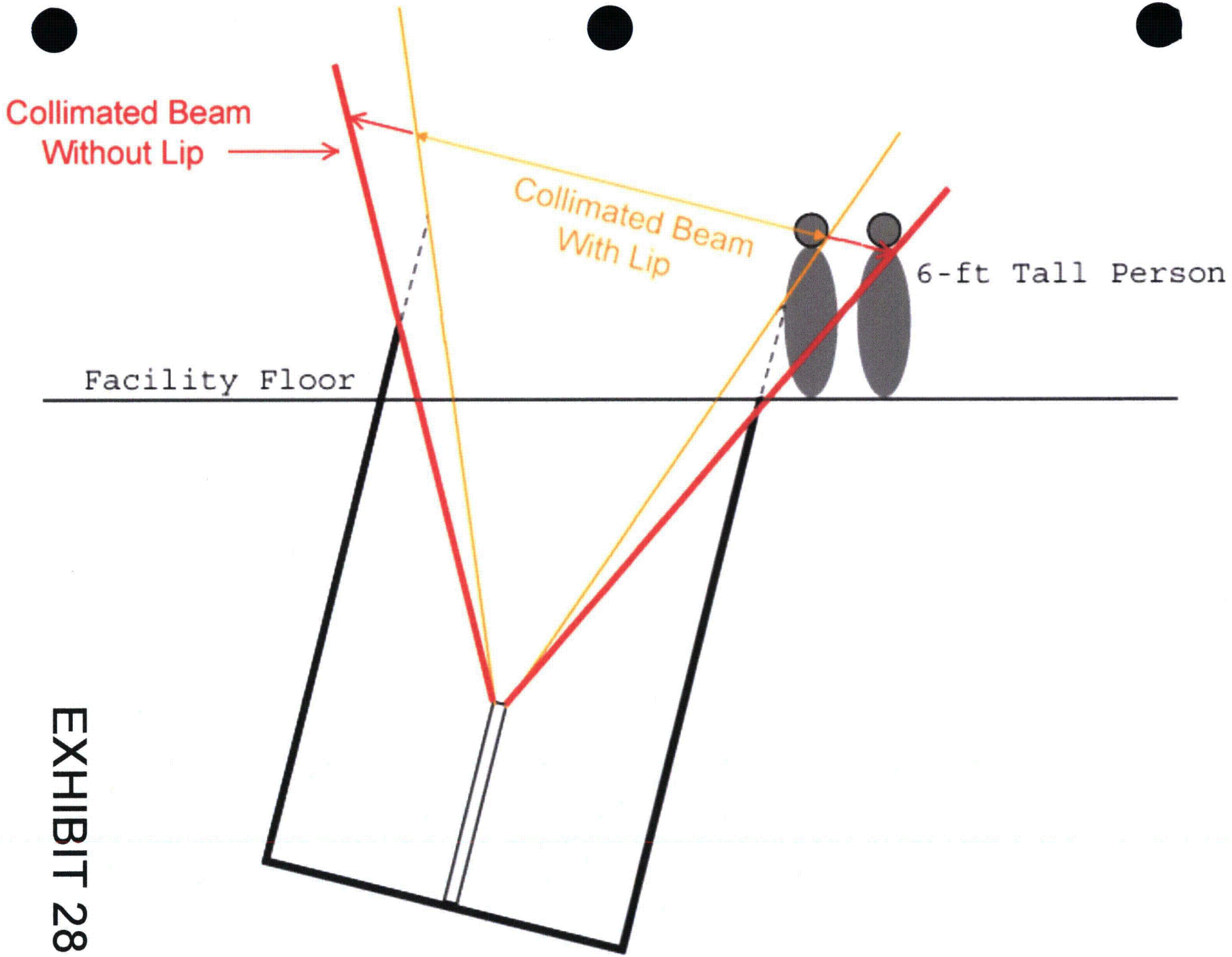

Collimated Beam
Without Lip
Collimated Beam
With Lip
6-ft Tall Person
Facility Floor

EXHIBIT 28

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	)	
	)	

WRITTEN REBUTTAL TESTIMONY AND DECLARATION OF DAVID L. HENKIN

I, David L. Henkin, declare under penalty of perjury that the contents of the following Written Rebuttal Testimony and Declaration of David L. Henkin are true and correct to the best of my knowledge:

Q: Please state your name and business address.

A: David Lane Henkin. My business address is Earthjustice, 223 South King Street, Suite 400, Honolulu, Hawai'i 96813.

Q: What is your role in this proceeding?

A: 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 9th Circuit, and the U.S. Supreme Court. I am a staff attorney at Earthjustice and serve as the lead attorney for intervenor Concerned Citizens of Honolulu.

Q: What is the purpose of your rebuttal testimony?

A: The purpose of my rebuttal testimony is to identify the exhibits offered in support of Concerned Citizens' Rebuttal to NRC Staff's Statement of Position.

Q: Do you recognize the document identified as Concerned Citizens' Exhibit "29"?

A: Yes.

Q: Please describe the document identified as Concerned Citizens' Exhibit "29."

A: Exhibit "29" contains excerpts from a true and correct copy of the transcript of the public meeting on the draft environmental assessment for Pa'ina Hawaii, LLC's proposed

irradiator, which took place in Honolulu on February 1, 2007. This document is available on ADAMS at accession number ML070590710.

Q: Do you recognize the document identified as Concerned Citizens' Exhibit "30"?

A: Yes.

Q: Please describe the document identified as Concerned Citizens' Exhibit "30."

A: Exhibit "30" is a true and correct copy of the monthly lease update that Pa'ina served in this proceeding on September 8, 2008.

Q: Does this conclude your testimony?

A: Yes.

I declare under penalty of perjury that I have read the foregoing Written Rebuttal Testimony and Declaration of David L. Henkin and know the contents thereof to be true of my own knowledge.

Dated at Honolulu, Hawai'i, September 16, 2008.

DAVID L. HENKIN

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

+ + + + +

PUBLIC MEETING

ON DRAFT ENVIRONMENTAL ASSESSMENT

FOR PROPOSED PA'INA HAWAII IRRADIATOR

+ + + + +

HONOLULU, HAWAII

+ + + + +

THURSDAY

FEBRUARY 1, 2007

7:00 P.M.

+ + + + +

410 ATKINSON DRIVE

ALA MOANA HOTEL

HIBISCUS BALLROOM

EXHIBIT 29

mind on scientific data, but I don't know whether I can convince someone who has a belief-based system that this is, in fact, a terrible problem. The beliefs are, as I said, probably deeply held and often these are fanned by very unbalanced fear-based campaigns.

The irradiator is important to Hawaii both economically and to protect our environment. The failure to support this licensing has been presented in the application and it's supported by the draft environmental assessment. I support the NRC's approval of the licensing of this facility. Thank you.

MR. TORRES: Darryn, last name N-G.

MR. NG: My name is Darryn Ng. I'm from the outer islands. I'm not from the mainland. I born and raised in Honolulu. I am 46 years old, and I'm from the South Shore.

I fish on the South Shore. I surf there 35 years, and, you know, but letting this facility be built, you just opening the doors for other facilities to be built. Just like Aloha Tower, when they develop over there, you know, started off with one small building and then other stuff started to get built. Next thing you know, you like go fish over there, no can fish. The guy with the badge going come. Get out

issue, the threat to health and welfare of our community. And I want the opposition -- I want my opposition to the project to be heard. I am very concerned about these plans to have an irradiation plant be built near the airport and am totally against the project. I find it extremely worrisome, having a building that stores radioactive material be built anywhere in our state. Having this building situated at this airport and in close proximity to an active runway is total lunacy.

I also feel that this is not a natural or safe way to rid our fruits and vegetables of bugs. Radiation, how good can this be for our bodies? Don't they use radiation for cancer patients? Would it or could it cause cancer in us by eating foods that were irradiated? It worries me.

My family and I go to the beach frequently. We were swim, boat and fish in the area adjacent to Sand Island, which is close proximity to the irradiation plant. I would not feel safe knowing that the irradiator is near the area and the potential for accidents, leaks, spills, et cetera. It's a very real concern. What would be the long-term impacts of my children, the ocean, the 'aina and the environment?

In closing, I do not see any benefits to

our state and our people with this project. I do see some serious threats to the health and welfare of our keiki and our environment should this irradiation plant be allowed to be built and to operate. Please leave things as they are.

And in closing is, all you guys talk, you guys get 25 acres big land on the outer islands, take one acre and put them inside there maybe. Aloha.

MR. TORRES: Thank you. Tom Sebas.

MR. SEBAS: Yes. Why do we need this? Since it's proven the food irradiation kills all living enzymes, the molecular structure of food is changed. Anyone can Google this subject and read eggs tastes different. Food is not the same. Irradiated food is not organic. This means something. It is not good to eat. Why threaten a billion-dollar tourist business so some papayas can be zapped?

The location at the airport is not logical. Why not put on -- put it on a low population island, not somewhere that has millions of people nearby.

This is a typical pro-business, don't-worry crowd. It's always about the money. Everyone Google the pros and cons. I spoke to some supporters who did zero research.

CERTIFICATE

This is to certify that the attached proceedings before the United States Nuclear Regulatory Commission in the matter of:

Name of Proceeding: Draft EIS for Pa'Ina Hawaii Irradiator - Public Meeting

Docket Number: (Not applicable)

Location: Honolulu, Hawaii

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission taken by me and, thereafter reduced to typewriting by me or under the direction of the court reporting company, and that the transcript is a true and accurate record of the foregoing proceedings.

Ralph Rosenberg
Official Reporter
Neal R. Gross & Co., Inc.

THE LAW OFFICES OF FRED PAUL BENCO
ATTORNEYS AT LAW
SUITE 3409, CENTURY SQUARE
1188 BISHOP STREET
HONOLULU, HI 96813

TEL: (808) 523-5083 FAX: (808) 523-5085
e-mail: fpbenco@yahoo.com

September 8, 2008

Office of the Secretary
U.S. Nuclear Regulatory Commission
ATTN: Rulemakings and Adjudication Staff
Washington, DC 20555-0001
Also Via E-Mail: HEARING DOCKET@nrc.gov

Re: Docket No. 030-36974, ASLBP No. 06-843-01-ML
Lease update in response to ASLB's
October 5, 2007 Order

Dear Secretary:

I represent the legal interests of Pa'ina Hawaii, LLC, which has applied for a Materials License. By Order dated October 5, 2007, the ASLB ordered Applicant Pa'ina Hawaii, LLC to inform the Board "of the current status of its lease negotiations for the irradiator site" on the first day of each month.

Lease negotiations between Pa'ina Hawaii, LLC and the State of Hawaii are still ongoing. No lease has yet been signed. Pursuant to your regulations, please find enclosed an original and two (2) copies of this letter.

This document was e-mailed to your office and to all parties on the Certificate of Service on this date. Hard copies are also being mailed to each of the parties on this date.

If you have any questions or comments, please feel free to contact my office. Tel: 808-523-5083; Fax: 808-523-5085; e-mail: fpbenco@yahoo.com. Thank you.

Very respectfully yours,

Fred Paul Benco

Encl.
cc: All parties on Certificate of
Service

EXHIBIT 30

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	)	
	)	

WRITTEN REBUTTAL TESTIMONY AND DECLARATION OF ERIC D. WEINERT

I, Eric D. Weinert, declare under penalty of perjury that the contents of the following Written Rebuttal Testimony and Declaration of Eric D. Weinert are true and correct to the best of my knowledge:

Q: Please state your name, occupation, employer, and business address.

A: My name is Eric D. Weinert. I am the vice president of CW Hawaii Pride, LLC, which is located on the island of Hawai'i at 16-664 Milo Street, Kea'au, HI 96749.

Q: What type of business is Hawaii Pride?

A: Since 2000, Hawaii Pride has owned and operated an x-ray, electron-beam irradiator to treat locally grown produce to meet the U.S. Department of Agriculture's Animal and Plant Health Inspection Service regulations for export from Hawai'i. The irradiator uses electricity to generate a beam of energy that is scanned across food products to eliminate damaging plant pests like fruit flies. At Hawaii Pride, we treat all types of locally grown produce, including papayas, sweet potatoes, rambutans, star fruit, lychees, dragon-fruit, longans, and apple bananas.

Q: What is your experience with electron-beam irradiators?

A: I have been employed by Hawaii Pride since August 2000 and have served as its vice president in charge of day-to-day operations during that entire time.

I was the point person who led the effort to build the first irradiator in the world designed specifically to meet U.S. Department of Agriculture quarantine regulations for treatment of Hawai'i fruit to be exported to the U.S. mainland. When I first began working for Hawaii Pride, before we had decided which irradiation technology to use, I remember John Masefield of Isomedix Corporation telling me an x-ray irradiator would be neither

technically reliable nor economically feasible. In the 1998 election, however, our Hawai'i Island citizens had split 50/50 on the question whether the use of radioactive materials for commercial purposes should be prohibited in Hawai'i County. Out of respect for the concerns the Hawai'i Island residents opposed to Cobalt-60 irradiation, we chose x-ray technology and ultimately proved John Masefield wrong, demonstrating both the reliability and the economic feasibility of fruit irradiation using non-nuclear technology.

Q: Are you familiar with the Nuclear Regulatory Commission ("NRC") Staff's Initial Statement of Position on Amended Environmental Contentions 3 and 4, which was filed in the Pa'ina Hawaii, LLC licensing proceeding on August 26, 2008?

A: I have reviewed the portions of the Staff's Initial Statement, including the testimony of Matthew D. Blevins, that set forth the Staff's reasons for failing to evaluate in the environmental assessment ("EA") for Pa'ina's proposed irradiator the alternative of an x-ray, electron-beam irradiator similar to that used by Hawaii Pride.

Q: At this time, please turn your attention to page 72 of the Staff's Initial Statement, which claims Mr. Blevins "did extensive research on the use of electron-beam irradiation." In paragraph A.31 of his testimony, Mr. Blevins similarly states he "conducted quite a bit of research into the electron-beam irradiator." Did Mr. Blevins ever contact you to discuss Hawaii Pride's experience treating local food products with a non-nuclear irradiator?

A: No. I have never been contacted by Mr. Blevins to discuss Hawaii Pride's operations and the success we have had irradiating food with our x-ray, electron beam irradiator. Moreover, to the best of my knowledge, neither Mr. Blevins nor any other NRC Staff member ever contacted anyone else associated with Hawaii Pride to discuss such matters.

Q: At any time during the Pa'ina licensing proceeding, have you ever been contacted by the NRC Staff?

A: Yes. In August of 2005, I received an email from Jack Whitten, Chief of the NRC's Region IV, informing me of the opportunity to request a hearing on Pa'ina's license application. I discussed the matter on the telephone with Mr. Whitten shortly thereafter. Since that time, I have not been contacted by anyone associated with the NRC Staff regarding Pa'ina's proposed irradiator.

Q: I now turn your attention to the portion of page 72 of the Initial Statement in which the Staff claims "the electron-beam irradiator was not a feasible alternative because of its economic uncertainty." Similarly, in paragraph A.31 of his testimony, Mr. Blevins states that "[t]he problem with the electron beam irradiator is economic uncertainty" and explains that SureBeam, the manufacturer of the Hawaii Pride irradiator, filed for bankruptcy in 2004 and that, "[i]n 2006 and 2007, at the time [he] was researching alternatives for purposes of the EA, there were still numerous articles questioning whether the electron-beam technology had long-term viability." Do agree with those assessments?

A: Not at all, and, had Mr. Blevins contacted me while he was preparing the EA, I would have told him so. While it's true that SureBeam field for bankruptcy in 2004, the reason had to do with mismanagement of company funds, not any problems with the electron beam technology.

In any event, SureBeam going out of business did not affect in any way the ability of a company like Pa'ina to acquire a reliable electron beam irradiator. SureBeam was merely a subsidiary of Titan Corporation, a financially stable defense contractor in San Diego. When SureBeam stopped doing business, Titan continued to sell the necessary equipment to build and operate an x-ray, electron-beam irradiator identical to the one Hawaii Pride has been using for the past eight years.

Moreover, Titan Corporation is not the only company that could sell Pa'ina a reliable x-ray, electron-beam irradiator. The same type of equipment is sold by L-3 Communications (another California defense contractor), Rad Source Technologies in Florida, ScanTech Holdings in Atlanta, and IBA Industrial, a Belgian corporation. There may be other companies selling electron beam irradiators.

The essential point is that Mr. Blevins and the rest of the NRC Staff were mistaken in assuming that SureBeam's bankruptcy meant the electron beam technology was economically uncertain. They simply do not understand the realities of the irradiator business.

Q: I now turn your attention to the portion of the Staff's Initial Statement and Mr. Blevins' testimony, where the Staff reports that Pa'ina's principal, Michael Kohn, claimed that electron-beam technology was not economically feasible because of the recurring costs of the electricity needed to generate the electron beam. Do you agree with Mr. Kohn's assessment?

A: No, Mr. Kohn's statement is baseless. Hawaii Pride has proven the economic feasibility of x-ray, electron-beam irradiation in Hawai'i.

The Hawaii Pride facility operates on Hawai'i Island, which has much higher electricity costs than O'ahu, where Pa'ina proposes to build its irradiator. Our electricity costs are currently approximately $0.40 per kilowatt hour ("kWh"), compared to approximately $0.30 per kWh for commercial users on O'ahu.

Even with these relatively high electricity costs, Hawaii Pride has consistently been making a profit treating local produce for export. We currently operate at only about fifteen percent of our facility's capacity and still make a profit.

Q: Does this conclude your testimony?

A: Yes.

I declare under penalty of perjury that I have read the foregoing Written Rebuttal Testimony and Declaration of Eric D. Weinert and know the contents thereof to be true of my own knowledge.

Dated at Kea'au, Hawai'i, September 3, 2008.

Eric D. Weinert

ERIC D. WEINERT

CERTIFICATE OF SERVICE

The undersigned hereby certifies that, on September 16, 2008, 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

Molly L. Barkman
Michael J. Clark
U.S. Nuclear Regulatory Commission
Office of the General Counsel
Mail Stop – O-15 D21
Washington, DC 20555-0001
E-mail: Michael.Clark@nrc.gov
Molly.Barkman@nrc.gov

Lauren Bregman, Law Clerk
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Mail Stop: T-3 F23
Washington, D.C. 20555-0001
E-mail: Lauren.Bregman@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: Paul.Abramson@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: Thomas.Moore@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: Anthony.Baratta@nrc.gov

Dated at Honolulu, Hawai'i, September 16, 2008.

DAVID L. HENKIN
Attorney for Intervenor
Concerned Citizens of Honolulu