October 1, 2007

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
Materials License Application	)	
	)	

INTERVENOR CONCERNED CITIZENS OF HONOLULU'S REPLY IN SUPPORT OF ITS AMENDED ENVIRONMENTAL CONTENTIONS #3 THROUGH #5

I. INTRODUCTION

Pursuant to 10 C.F.R. § 2.309(h)(2) and the Board's June 21, 2007 Order, intervenor Concerned Citizens of Honolulu files its reply to applicant Pa'ina Hawaii, LLC's Answer To Intervenor Concerned Citizens of Honolulu's Amended Environmental Contentions #3 Through #5 (dated September 19, 2007) and the Nuclear Regulatory Commission ("NRC") Staff's Response (dated September 20, 2007).[1] As discussed in detail below, admission of all three amended environmental contentions is warranted.

II. THE "FORTY QUESTIONS" PUBLICATION DOES NOT ESTABLISH THE FINAL EA'S ADEQUACY

Pa'ina's and the Staff's reliance on the Council on Environmental Quality's ("CEQ's") "Forty Most Asked Questions" publication to establish the adequacy of the Final Environmental Assessment Related to the Proposed Pa'ina Hawaii, LLC Underwater Irradiator in Honolulu,

[1] Pursuant to the June 21, 2007 Order, Concerned Citizens was to file any reply within ten days of the service of the answers. Since the last day of the designated period fell during the weekend, Concerned Citizens is filing its reply on "the next day which is neither a Saturday, Sunday, nor holiday." 10 C.F.R. § 2.306.

Hawaii ("Final EA") (ADAMS Accession No. ML071150121) is misplaced. See Pa'ina's Answer at 2-4; Staff's Response at 7.[2] As the Ninth Circuit emphasized in Friends of the Earth v. Hintz, 800 F.2d 822 (9th Cir. 1986), "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.

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.[3] As detailed in Concerned Citizens' amended environmental contentions, 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 v. Powell, 395 F.3d 1019, 1027 (9th Cir. 2005). While Pa'ina and the Staff may dispute the merits of Concerned Citizens' claims, their opposition merely confirms the existence of "genuine dispute[s]" that should be resolved through admission of the amended environmental contentions. 10 C.F.R. § 2.309(f)(1)(vi).

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[2] As the CEQ noted, the fact "a lengthy EA" would be needed to evaluate adequately all the potentially significant environmental impacts associated with Pa'ina's proposed irradiator "indicates that an [environmental impact statement ("EIS")] is needed." 46 Fed. Reg. 18,026, 18,037 (Mar. 23, 1981).

[3] It should go without saying that, in entering into the Joint Stipulation and Order Regarding Resolution of Concerned Citizens' Environmental Contentions, Concerned Citizens "bargained for" a legally adequate NEPA document. Pa'ina's Answer at 3; see also 3/20/06 Joint Stipulation at ¶ 6 (reserving Concerned Citizens' right "to file additional contentions challenging the adequacy of any NEPA document that the NRC prepares regarding the Applicant's proposed irradiator").

III. AMENDED ENVIRONMENTAL CONTENTION #3 IS ADMISSIBLE

A. Concerned Citizens Presented Adequate Support For Its Contention The Final EA Failed To Respond To Comments.

The Board should reject the Staff's claim that Amended Environmental Contention #3 lacks sufficient detail regarding the Staff's failure to respond to comments on the deficiencies in the Draft EA and Appendix B. See Staff's Response at 5.[4] In arguing that Concerned Citizens should have identified which responses in the Final EA were inadequate, the Staff fails to appreciate that this portion of Amended Environmental Contention #3 presents a contention of omission. Concerned Citizens does not claim, as the Staff asserts, that "all comment responses are inadequate," but rather that the Final EA did not include any response that addressed various comments pointing out deficiencies in the Staff's draft analysis. Id.

The NRC's hearing regulations require that, for contentions involving failures to provide information required by law, Concerned Citizens must identify each failure and the supporting reasons for Concerned Citizens' belief the information is legally required. See 10 C.F.R. § 2.309(f)(1)(vi). That is precisely what Concerned Citizens did. Pages 7 and 8 of its amended contentions list the comments regarding deficiencies in the Draft EA and Appendix B to which the Staff failed to respond. Concerned Citizens then cited case law establishing that the Final EA's failure to "respond to public comments concerning the project" renders it inadequate. 9/4/07 Amended Contentions at 8 (quoting Sierra Nevada Forest Protection Campaign v. Weingardt, 376 F.Supp.2d 984, 991 (E.D. Cal. 2005)). While the Staff may dispute whether it was obliged to provide specific responses to comments, this dispute over "a material issue of law" militates in favor of admitting this portion of Amended Environmental Contention #3. 10 C.F.R. § 2.309(f)(1)(vi).

[4] Pa'ina does not address this aspect of Amended Environmental Contention #3.

B. The Final EA Violates NEPA's Requirement To Give The Public An Opportunity To Review The Data And Calculations On Which The Staff Relies To Support Its Conclusions About Potential Impacts.

1. Concerned Citizens Adequately Supported Its Contention The Final EA Contains Insufficient Evidence And Analysis Regarding Potential Impacts.

Concerned Citizens likewise provided sufficient information in support of its contention the Final EA violates NEPA's mandate to present the data and analysis underlying its conclusions that potential impacts would not be significant. See Pa'ina's Answer at 3-4. Like the first portion of Amended Environmental Contention #3, discussed above, this is a claim of omission. Accordingly, in compliance with 10 C.F.R. § 2.309(f)(1)(vi), Concerned Citizens identified with great specificity the information that NEPA required the Final EA to contain, but the Staff failed to provide. See 9/4/07 Amended Contentions at 9-11. Concerned Citizens then provided extensive citation to CEQ regulations and controlling case law that substantiate its "belief" that the missing information is "required by law." 10 C.F.R. § 2.309(f)(1)(vi); see also 9/4/07 Amended Environmental Contentions at 8, 11-14. While Pa'ina may disagree, the existence of such a dispute justifies admitting the contention, not keeping it out.

2. Amended Environmental Contention #3 Is Timely.

Since the adequacy of the NRC's NEPA analyses "cannot be determined before they are prepared," the Commission has long held that "contentions regarding their adequacy cannot be expected to be proffered at an earlier stage of the proceeding before the documents are available." Duke Power Co. (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041, 1049 (1983). Despite this well-settled precedent, Pa'ina urges the Board to reject "almost all" of Concerned Citizens' amended environmental contentions as untimely on the grounds that Concerned Citizens should have earlier offered comment on an environmental analysis that did

not yet exist. Pa'ina's Answer at 4; see also id. at 5-28. There is no support for Pa'ina's position.

In Duke Power Co., the Commission noted that, where an applicant has prepared an environmental report, an intervenor must timely file contentions challenging the adequacy of the applicant's analysis, even though "the staff may provide a different analysis in its [draft environmental statement]." 17 NRC at 1049. This, however, is not such a case. Prior to issuance of the Draft EA, neither the Staff nor the applicant had prepared any environmental analysis. Accordingly, Concerned Citizens could not have included "in its initial Petition" contentions regarding the flaws in a non-existent environmental analysis, as Pa'ina argues it was obliged to do. Pa'ina's Answer at 5; see also id. at 6-7, 9, 11, 13-15, 17-21, 23, 25, 27-28. Instead, Concerned Citizens properly and timely included in its original hearing request the only environmental contentions that then existed, challenging the Staff's failure to justify its categorical exclusion of Pa'ina's proposed irradiator, as well as its refusal to prepare the requisite NEPA analysis. 10/3/05 Hearing Request at 19-25. Indeed, it is only due to Concerned Citizens' efforts, which resulted in a stipulation with the Staff to prepare at least an EA, that there has been any environmental review of Pa'ina's proposed irradiator. See 3/20/06 Joint Stipulation; 4/27/06 Board Order (Confirming Oral Ruling Granting Motion to Dismiss Contentions).

Once the Staff issued the Draft EA, Concerned Citizens timely filed contentions challenging the adequacy of that document. See 4/30/07 Board Order at 1 (noting contentions addressing Draft EA were "timely").[5] On June 21, 2007, the Board issued an order instructing

[5] Pa'ina simply has its facts wrong when it argues the sub-contentions challenging the Staff's failure to provide any calculations, analysis or data "used in the stylized fluid dynamic calculations that purportedly quantify tsunami and hurricane risk" or "quantifying hurricane

Concerned Citizens to file its amended contentions regarding the Final EA "within 21 days of service of the Final EA," which occurred on August 13, 2007. 6/21/07 Board Order at 2. Since the last day of the 21-day period fell on Labor Day, a legal holiday nationwide, the deadline for Concerned Citizens to file its amended environmental contentions was extended until Tuesday, September 4, 2007, "the next day which is neither a Saturday, Sunday, nor holiday." 10 C.F.R. § 2.306. Concerned Citizens timely filed its contentions on that date.[6]

For its part, the Staff notes that many of the sections for which Concerned Citizens claims additional analysis is required did not change materially from the Draft EA and suggests this portion of Amended Environmental Contention #3 is untimely because "these alleged

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storm surge risk" were untimely because they allegedly were not raised by June 7, 2007. 9/4/07 Amended Contentions at 10; see Pa'ina's Answer at 24. Concerned Citizens raised the identical challenges in its February 9, 2007 contentions regarding the Draft EA's deficiencies, four months before the deadline Pa'ina argues applies. See 2/9/07 Contentions at 17. Concerned Citizens reiterated these claims in its amended contentions because the Final EA failed to cure these deficiencies.

[6] The Board should reject Pa'ina's argument that Concerned Citizens should have raised its claim regarding the deficiency of the Final EA's analysis of a 6-foot water loss earlier, based on documents that merely noted the level of the water table. Pa'ina's Answer at 12-13. In its contentions regarding the Draft EA, Concerned Citizens expressly challenged the Staff's failure to analyze the potential that natural disasters or aviation accidents would cause "damage to the irradiator pool structure under the floor level, resulting in a loss of vital pool shielding water." 2/9/07 Contentions at 20. Prior to the issuance of the Final EA, Concerned Citizens had no way to know whether the Staff would continue to ignore those potential impacts, requiring no amendment to Environmental Contention #3, or would provide a new analysis. When the Final EA came out with a new analysis, Concerned Citizens properly and timely filed an amended contention to convert its contention of omission into one "rais[ing] specific challenges regarding the new information." Duke Energy Corp. (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 383 (2002).

Similarly, the original version of Environmental Contention #3 challenged the Staff's failure to substantiate its claim that a seismically-induced radiological accident involving Pa'ina's proposed irradiator was unlikely or to consider liquefaction during an earthquake. 2/9/07 Contentions at 17, 20. Before the Final EA came out, Concerned Citizens had no way to raise specific challenges to the Staff's modified analysis of earthquake risks, which assumes, without explanation, that compliance with the International Building Code would mitigate potential impacts.

deficiencies were not raised" previously. Staff's Response at 5. Comparison of the original and amended versions of Environmental Contention #3 confirms, however, that Concerned Citizens did raise in connection with the Draft EA the deficiencies the Staff cites. Compare 2/9/07 Contentions at 16-17, 20 with 9/4/07 Amended Contentions at 8-10. Where the Staff's analysis did not change between the Draft and Final EA, Concerned Citizens simply reiterated its previously filed challenges to make clear that the Final EA had not remedied the deficiencies and, thus, the dispute was not moot. See 6/21/07 Board Order at 2 (instructing parties to address "which, if any, of the Intervenor's proffered contentions ... are now moot").[7]

3. Pa'ina's And The Staff's Arguments On The Merits Do Not Preclude Admission Of The Contention.

In addition to their erroneous challenges to Amended Environmental Contention #3's timeliness, Pa'ina and the Staff attempt to prove the Final EA does, in fact, contain adequate information about potential impacts. See Pa'ina's Answer at 5-29; Staff's Response at 6-8. The Board should reject as "misguided" Pa'ina's and the Staff's use of their answers "to engage in an attempted merit-based refutation of [Concerned Citizens'] contentions." Pa'ina Hawaii, LLC (Material License Application), LBP-06-12, 63 NRC 403, 406 (2006). Eventually, the Board will have to determine whether the Final EA passes legal muster. "At the contention admissibility stage of the proceeding, however, a factual defense is ... irrelevant and inappropriate." Id. Pa'ina's and the Staff's arguments serve only to confirm there are numerous disputes over issues "within the scope of the proceeding" and "material to the findings the NRC

[7] In contrast, to the extent the Final EA contained material changes in the Staff's analysis, Concerned Citizens modified its contentions to address those changes. For example, Concerned Citizens eliminated its original contention that the Staff had failed entirely to address possible impacts from a loss of shielding water due to an aviation accident or natural disaster, replacing it with a challenge to the adequacy of the new analysis presented for the first time in the Final EA. Compare 2/9/07 Contentions at 20 with 9/4/07 Amended Contentions at 9.

must make to support the action that is involved in the proceeding" that should be resolved following admission of the amended contention. 10 C.F.R. § 2.309(f)(1)(iii), (iv).

Should the Board consider Pa'ina's and the Staff's merits-based arguments, it should reject them. The Staff's opposition is based on a mischaracterization of this portion of Amended Environmental Contention #3 as arguing "that the Final EA may not rely on documents incorporated by reference." Staff's Response at 6. In fact, Concerned Citizens has acknowledged that, in certain circumstances, "NEPA permits agencies to incorporate material by reference." 9/4/07 Amended Contentions at 11. The problem here is that, by incorporating by reference material that was not "reasonably available for inspection by potentially interested persons within the time allowed for comment," the Staff "imped[ed] agency and public review of the action," which is vital to accomplish NEPA's basic purposes. 40 C.F.R. § 1502.21; see also NUREG-1748, "Environmental Review Guidance for Licensing Actions Associated with NMSS Programs," §1.6.4 (2003) (same); 40 C.F.R. § 1500.1(b) ("expert agency comments, and public scrutiny are essential to implementing NEPA"); Staff's Response at 7 (citing 40 C.F.R. § 1500.1(b) and acknowledging NEPA's mandate to make environmental information publicly available). That is not permitted.

The Staff's assertion that "the vast majority of Staff and contractor-generated documents cited in the Final EA" was publicly available, even if accurate, acknowledges by implication that many cited sources were not available, violating the Staff's duties under NEPA. Staff's Response at 7 (emphasis added); see 9/4/07 Amended Contentions at 12-13 (identifying missing references).[8] Moreover, even where cited documents were reasonably available, they themselves

[8] Pa'ina's answer identifies yet another missing document: the November 27, 2006 email (NRC, 2006c) the Final EA cites in support of its claim that "the maximum dose at the pool surface would be well below 1 millirem/hour." Final EA at 8; see also Pa'ina's Answer at 6.

failed to provide the data and analysis required to satisfy the Staff's NEPA obligations. See 9/4/07 Amended Contentions at 13-14.[9] Concerned Citizens' amended contentions identify with specificity the violations of NEPA's disclosure requirements related to the Final EA's reliance on documents incorporated by reference, demonstrating the existence of a genuine dispute with the Staff on material issues of law and fact.

Pa'ina likewise fails to establish the Final EA provided adequate information regarding the Staff's assessment of potential impacts. Pa'ina addresses seriatim the bullets on pages 8 through 11 of Concerned Citizens' Amended Environmental Contentions that identify required information missing from the Final EA. To demonstrate the existence of genuine disputes about these issues, Concerned Citizens will address Pa'ina's arguments on the merits (with the exception of its arguments regarding timeliness, which are addressed in Part III.B.2, supra).

Initially, Pa'ina claims that two documents that the Final EA incorporated by reference ("NRC, 2003" and "NRC, 2006c") provide the requisite analysis regarding "occupational hazards created by the irradiator." Pa'ina's Answer at 6. The publicly available version of the November 27, 2006 email referred to as "NRC, 2006c" does not, however, include the microshield calculations on which the Staff relied to conclude occupational exposures would be

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That document mentions "[a]ttached ... microshield calculation," but does not actually attach it, providing nothing for experts or the public to review. 11/27/06 Email from A. Turner Gray to M. Blevins (ML063480293).

[9] The Staff's reliance on the deference given to agency expertise is misplaced. Staff's Response at 8. As the Ninth Circuit emphasized in Idaho Sporting Cong. v. Thomas, 137 F.3d 1146 (9th Cir. 1998):

> [A]llowing [a federal agency] to rely on expert opinion without hard data either vitiates a plaintiff's ability to challenge an agency action or results in the courts second guessing an agency's scientific conclusions. As both of these results are unacceptable, we conclude that NEPA requires that the public receive the underlying environmental data from which [an agency] expert derived her opinion.

Id. at 1150.

below 1 millirem/hour, and, accordingly, the Final EA cannot rely on this document to satisfy its duty to provide "the underlying environmental data from which [the NRC's experts] derived [their] opinion[s]." Idaho Sporting Cong., 137 F.3d at 1150; see also 11/27/06 Email from A. Turner Gray to M. Blevins (ML063480293).

More importantly, both documents Pa'ina cites present information regarding the expected rate of exposure to employees during only ordinary operation of Pa'ina's irradiator. See 11/27/06 Email from A. Turner Gray to M. Blevins (ML063480293); 11/4/03 Inspection of CFC Logistics Irradiator at 6-7 (ML033080387). Neither provides any analysis of the non-routine situations in which an employee would receive more than the occupational dose limit, evaluates the likelihood such exposures would occur, or quantifies what the Final EA means when it asserts such an event is "unlikely." Final EA at 8.[10] That is the information Concerned Citizens contends the Staff must "put on the table, for the deciding agency's and for the public's view, ... so as to permit informed decision making." Lands Councils, 395 F.3d at 1027. It is completely missing from the Final EA.

There is likewise no basis for Pa'ina's claim "the Staff fully analyzed the radiation dosage outside the irradiator." Pa'ina's Answer at 7. Even if one were to assume the Staff intended to incorporate by reference "NRC, 2003" and "NRC, 2006c" (the Final EA does not reference any document in support of its assertions about dose rates outside the irradiator) and could lawfully overlook the fact that the publicly available version of "NRC, 2006c" does not include any data or calculations, neither document considers dose rates outside the facility. See Final EA at 8. Rather, both present information regarding only "dose rates at the surface of the

[10] Significantly, the Final EA does not state it would be impossible for an employee to receive more than the occupational dose limit, just that it would be "unlikely." Id. NEPA requires analysis of "impacts which have catastrophic consequences, even if their probability of occurrence is low." 40 C.F.R. § 1502.22(b)(3).

pool," not the information Concerned Citizens identified as missing. 11/4/03 Inspection of CFC Logistics Irradiator at 7; see also 9/4/07 Amended Contentions at 8.

As with occupational exposures, the Final EA fails to provide any analysis of the non-routine situations in which a member of the public would receive more than the public limit, evaluate the likelihood such exposures would occur, or quantify what it means when it asserts such an event is "unlikely." Final EA at 8. The Final EA's mere laundry list of safety features, bereft of any analysis of the features' effectiveness or likelihood of failing, does not, as Pa'ina asserts, satisfy the Staff's obligation to take a hard look at potential impacts to the public. Pa'ina's Answer at 7.[11]

The Board's finding that Safety Contention No. 8 was inadmissible does not relieve the Staff of its obligation under NEPA to evaluate transportation-related impacts. See id. at 8. Because the proposed irradiator cannot function without regular shipments of Cobalt-60, transportation of sources – regardless of which entity performs that task – is a "connected action" whose impacts must be evaluated in the Staff's NEPA document. 40 C.F.R. § 1508.25(a)(1). The Final EA's citation to "NRC, 2006d" does not satisfy NEPA's disclosure requirements, since the underlying data and calculations are not publicly available. See 12/6/06 Email from E. Keegan to M. Blevins (ML063480301).

Concerned Citizens does not challenge the Final EA's analysis on the grounds it should have found greater socioeconomic benefits, as Pa'ina suggests. Pa'ina's Answer at 9. Rather, due to the potential for adverse effects on tourism from locating an irradiator at the gateway to Hawai'i, as well as the acknowledged potential for radiation exposure, "mass disruption," property contamination, and "costly cleanup" in the event of a terrorist attack, Concerned

[11] That superficial discussion likewise fails to satisfy the Staff's obligation to assess the potential for exposure of workers to lethal doses. See id. at 27-28.

Citizens contends a properly conducted analysis would have concluded socioeconomic impacts would be significant and adverse. Final EA at B-6. The Staff illegally failed to analyze these relevant factors. See Marble Mountain Audubon Soc'y v. Rice, 914 F.2d 179, 182 (9th Cir. 1990).

Nor did the Staff present in the Final EA any analysis or data to justify its contrary conclusion that socioeconomic impacts would be beneficial (albeit insignificant). The Final EA's citation to two Federal Register documents prepared by the Animal and Plant Health Inspection Service ("APHIS, 2004" and "APHIS, 2006") does not, as Pà'ina claims, provide the requisite analysis. Pa'ina's Answer at 10.[12] Neither document even mentions Pa'ina's proposed Cobalt-60 irradiator; their cursory economic analyses refer exclusively to the electron-beam irradiator on Hawai'i Island. See 69 Fed. Reg. 7,541, 7,546-47 (Feb. 18, 2004); 71 Fed. Reg. 4,451, 4,455-56 (Jan. 27, 2006); see also 71 Fed. Reg. at 4,456 (noting difficulty predicting "what economic effects these changes will have"). Even if the APHIS documents' abbreviated and unquantified economic analyses were otherwise adequate, the factual differences between the Hawai'i Island electron-beam irradiator and Pa'ina's proposed Cobalt-60 irradiator on O'ahu would preclude the Staff from relying on the APHIS analyses to repair the analytical defects in the Final EA. Idaho Sporting Cong., 137 F.3d at 1150-51; see also Klamath-Siskiyou

[12] The Final EA does not cite the August 29, 2006 email from Michael Kohn (Pa'ina's principal) in support of its analysis of socioeconomic impacts, so any information presented therein was not incorporated by reference and, thus, cannot be used to compensate for deficiencies in the Staff's analysis. See 40 C.F.R. § 1502.21; Motor Vehicle Mfrs. Ass'n of U.S. v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 50 (1983) ("agency's action must be upheld, if at all, on the basis articulated by the agency itself"). In any event, in his letter, Mr. Kohn concedes he lacks the expertise to quantify the proposed irradiator's economic impacts. See 8/29/06 Kohn email at 2 ("To quantify in detail all the economic benefits would require a large analysis. I am not able to do that"). Accordingly, his self-interested statements could not form the basis of a legally adequate impact analysis. See 40 C.F.R. § 1500.1(b) (NEPA requires "high quality" information and "[a]ccurate scientific analysis").

Wilderness Center v. Bureau of Land Management, 387 F.3d 989, 994 (9th Cir. 2004) (NEPA requires "objective quantification of the impacts ... 'absent a justification regarding why more definitive information could not be provided'").[13]

While Pa'ina claims not to understand Concerned Citizens' challenge to the Staff's narrow focus on "off-site consequences," the contention is quite straightforward. Pa'ina's Answer at 10 (quoting 9/4/07 Amended Contentions at 9). NEPA requires the Staff to take a hard look at the consequences of allowing Pa'ina to operate its proposed irradiator, without artificially excluding potentially significant impacts merely because they may affect workers or emergency responders located within the facility itself, rather than off-site. See 40 C.F.R. § 1508.27(b)(2) (agency must consider "degree to which the proposed action affects public health or safety"); see also 9/4/07 Resnikoff Dec. ¶¶ 13-14 (discussing potential for elevated radiation exposures to workers and emergency responders in the event of an aviation accident or natural disaster).

Pa'ina's suggestion that the Staff provided the requisite data to back up its claim a six-foot loss of pool water would not cause significant impacts is baseless. Pa'ina's Answer at 11. The source the Final EA cites ("NRC, 2007," a March 28, 2007 document entitled "Microshield Summary Sheet for Loss of 6 Feet of Water at Pa'ina Irradiator") is not publicly available, and, thus, the Staff violated NEPA's command to provide "the underlying ... data" for its findings.

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[13] For example, the 2004 analysis notes that, with irradiation at the Hawai'i Island irradiator, "[g]rowers and shippers on the main island of Hawaii would benefit from lower transportation costs, since shipment of the crop from Hawaii to Oahu for fumigation would no longer be necessary," and "[t]he availability of treatment at a more convenient location will also remove various logistical complications." 69 Fed. Reg. at 7,547. None of these savings in "total expense and time delay" would be realized at Pa'ina's proposed irradiator, which would still require Hawai'i Island producers to transport their products to O'ahu. Id.; see also 2/1/07 Hearing Tr. at 44-46 (ML070590710) (most producers located on Hawai'i Island).

Idaho Sporting Cong., 137 F.3d at 1150; see also Final EA at 9.[14] Moreover, the Final EA presents no analysis to justify the Staff's assumption workers and emergency responders would be protected from radiation exposures above regulatory limits in the wake of the type of catastrophic accident or natural disaster that would cause the shielding water to leak out.

The Staff's belated revelation that, while preparing the Final EA, it had calculated, but then failed to disclose, the potential radiation dose associated with a loss of shielding water to the eight-foot depth of the surrounding water table provides additional support for Concerned Citizens' challenge to the Staff's decision to discuss in the Final EA only a six-foot loss. See Staff's Response at 10; see also 9/4/07 Amended Contentions at 9, 16-17. That the Staff knew an eight-foot loss of shielding water threatens to expose workers and emergency responders to a radiation dose of 8,465 millirems/hour – over twenty-eight times the dose from a six-foot water loss – and then made a conscious decision to keep that information from the public makes a mockery of NEPA's command to disclose fully the potential impacts of allowing Pa'ina to operate its proposed irradiator. See "Microshield Summary Sheet for Loss of 8 Feet of Water Shielding" (run date May 9, 2007) (ML072630315).[15] Concerned Citizens is not challenging "the Staff's thought processes," as Pa'ina argues, but whether the Staff's failure to disclose the impacts of a loss of shielding water to the depth of the water table violated NEPA, subverting Congress's intent that "environmental information [be made] available to public officials and

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[14] Pa'ina fails to explain the relevance of the "NRC, 2003" and "NRC, 2006c" documents, which discuss expected dose rates when the pool is full of shielding water. See Pa'ina's Answer at 13. Moreover, as noted previously, the microshield calculations referenced in "NRC, 2006c" are not publicly available and, thus, cannot be used to defend the Staff's analysis.

[15] Prior to the Staff's September 20, 2007filing of its response to the amended environmental contentions, Concerned Citizens was unaware of the existence of these calculations. Henkin Supp. Dec. ¶ 5.

citizens before decisions are made" and that agency decisions be "based on understanding of environmental consequences." 40 C.F.R. § 1500.1(b), (c); see also Pa'ina's Answer at 12.

The revelation the Staff covered up microshield calculations showing an eight-foot loss of shielding water could expose workers to nearly double the annual occupational dose limit of 5,000 millirem/year further demonstrates the existence of a genuine dispute over the Final EA's failure to justify its claim that "worker doses should not be significantly increased in the area around the pool" in the event of a loss of shielding water or to quantify what it means by "significantly increased." Final EA at 9; see also id. at 8; 9/4/07 Amended Contentions at 9. The documents Pa'ina cites – "NRC, 2003" and "NRC, 2006c" – discuss only expected dose rates when the pool is full of shielding water and, thus, are completely irrelevant to this contention. See Pa'ina's Answer at 14. There is likewise no support for the Staff's speculation that debris around the pool would prevent workers and emergency responders from receiving harmful radiation doses. See Final EA at 9; 9/4/07 Amended Contentions at 9.

Concerned Citizens' contentions regarding the Final EA's failure to justify its assumption that an aviation accident likely would not breach the Cobalt-60 sealed sources or cause a fire that would damage those sources does not, as Pa'ina argues, impermissibly challenge the regulatory requirements for source assemblies. Pa'ina's Answer at 16, 20. NEPA contemplates that activities may be legal, but nonetheless might have significant environmental impacts that must be considered before a decision on a project proposal is made. The question here is not whether the sources Pa'ina intends to use would comply with 10 C.F.R. § 36.21, but rather whether there may be significant environmental impacts should an airplane strike Pa'ina's proposed irradiator

and falling debris smash into Cobalt-60 sources.[16] The Staff cannot answer that question without performing calculations and analyses that are absent from the Final EA.[17]

Pa'ina's argument that Concerned Citizens must prove sources would be breached in an aviation accident reflects an improper attempt to shift to the public "the burden of complying with NEPA," which lies with the Staff. Duke Power Co., CLI-83-19, 17 NRC at 1048; see also Pa'ina's Answer at 16-17. It is the Staff's duty, not Concerned Citizens', to identify potential threats to the irradiator from aviation accidents and take a "hard look" at them to determine whether significant impacts may occur, triggering the Staff's duty to prepare an EIS. See Klamath-Siskiyou Wildlands Center, 387 F.3d at 993; see also Idaho Sporting Cong., 137 F.3d at 1151-52 (failure to analyze potential effects of timber sale on fisheries "implicate both of NEPA's disclosure goals, i.e., to insure the agency has fully contemplated the environmental effects of its action and to insure the public has sufficient information to challenge the agency"); 40 C.F.R. § 1508.9(a)(1). Concerned Citizens' expert testimony detailing the Staff's failure "to conduct standard factual and scientific site specific analysis" regarding threats from aviation accidents and "to provide the analytic data necessary for any public challenge to the proposed [irradiator]" adequately substantiates its challenge to the Final EA's analysis of potential impacts. Idaho Sporting Cong., 137 F.3d at 1150.

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[16] Pa'ina's related arguments that Concerned Citizens' contentions regarding flaws in the Final EA's analysis of seismic impacts and of worker radiation exposures in the event of an accident impermissibly challenge the regulations governing irradiators suffer from the same flaw. See id. at 23, 27.

[17] The absence of any consequences analysis renders meaningless the Staff's assertion that a breach would be unlikely. See 40 C.F.R. § 1500.1(b) (NEPA requires "high quality" information and "[a]ccurate scientific analysis"); Klamath-Siskiyou Wildlands Center, 387 F.3d at 996 ("NEPA documents are inadequate if they contain only narratives of expert opinions"). The Staff's failure to quantify the likelihood of a breach further violates NEPA. See Klamath-Siskiyou Wilderness Center, 387 F.3d at 994 (NEPA generally requires "objective quantification of the impacts").

None of the sources Pa'ina cites evaluated the factual scenario of a jet fuel fire involving an irradiator of the design Pa'ina proposes, and, thus, they cannot cure the Final EA's failure to take the required hard look at potential impacts that might result from an aviation accident. See Pa'ina's Answer at 18; see also Idaho Sporting Cong., 137 F.3d at 1150-51. The Final EA fails to provide any analysis to substantiate its claim only "minimal water evaporation" would occur in the event of a fuel fire, to consider the potential that a breach in the irradiator pool could allow burning jet fuel to come into contact with the sources, to analyze the effect on source integrity of being subjected for prolonged periods to the elevated average temperature at which jet fuel burns, or to consider the potential for a jet fuel fire in the contained environment of Pa'ina's irradiator to reach temperatures in excess of Cobalt-60's melting temperature. Final EA at 10. The Final EA's conclusory assertions about the scenarios the Staff assumes, without analysis, to be "most likely" do not satisfy the Staff's obligations under NEPA. Pa'ina's Answer at 21; see also Ocean Advocates v. U.S. Army Corps of Engineers, 402 F.3d 846, 864 (2005) (Staff "cannot avoid preparing an EIS by making conclusory assertions that an activity will have only an insignificant impact on the environment") 40 C.F.R. § 1502.22(b)(3) (Staff must consider impacts "even if their probability of occurrence is low").

With respect to potential impacts associated with seismic events, tsunamis and hurricanes, Pa'ina fails to back up its assertions that the Final EA contains the requisite analysis to satisfy NEPA's mandate to take a hard look. See Pa'ina's Answer at 21-25.[18] While the Final Topical Report – the only source the Final EA and Pa'ina cite – states that "a stylized fluid dynamic calculation" was conducted to assess potential impacts associated with tsunamis and

[18] The Board should reject Pa'ina's circular logic that the Staff's issuance of a Finding of No Significant Impact ("FONSI") proves the proposed irradiator cannot possibly have significant environmental impacts. Id. at 22. Pa'ina ignores Concerned Citizens' challenge to the FONSI.

notes the conclusions reached, it does not actually set forth for public review the calculations that were performed. Final Topical Report at 3-5 (ML071280833). Nor does the Final Topical Report provide the analysis necessary to support the Final EA's assumption the International Building Code will ensure against earthquake-related accidents involving the proposed irradiator. Id. at 3-3. More fundamentally, the Final EA fails completely to quantify hurricane storm surge and tsunami inundation runup potential, to consider the effects on the irradiator pool of increases in buoyancy forces due to hurricane surge or tsunami inundation, to consider potential consequences of hurricane winds, to evaluate unique features of Ke'ehi Lagoon that might increase the potential for tsunami-related impacts, to consider potential focusing effects of seismic energy on O'ahu, or to evaluate properly the threat of liquefaction. See 9/407 Amended Contentions at 7-8. Consequently, it lacks the hard look at potential impacts from natural disasters that NEPA mandates.

Pa'ina's assertion that the Final EA adequately quantified the risk of terrorist attack involving the proposed irradiator is baseless. Pa'ina's Answer at 25-26.[19] Review of Appendix B reveals a total absence of calculations, analysis of data substantiating the Staff's conclusion that the "possibility of a terrorist attack ... is ... low," or quantifying this allegedly "low" probability. Final EA at B-7. It is well-established that, if it is possible to quantify the likelihood of a terrorist attack, NEPA requires that the Staff do so and disclose that information in the Final EA. Klamath-Siskiyou Wilderness Center, 387 F.3d at 994; see also San Luis

[19] Pa'ina improperly attempts to shift to Concerned Citizens the Staff's legal duty to analyze terrorist threats. In any event, Concerned Citizens has presented ample expert and documentary evidence demonstrating the substantial threat of terrorist attack due to a variety of factors, including the vulnerability of Pa'ina's proposed site and facility, the economic importance of Honolulu International Airport, the symbolic value of Pearl Harbor and other surrounding military bases, the ease with which Cobalt-60 can be dispersed, and the large quantity of Cobalt-60 that would be stored at the irradiator. See 9/4/07 Amended Contentions at 20-22.

Obispo Mothers for Peace v. Nuclear Regulatory Comm'n, 449 F.3d 1016, 1032 n.9 (9th Cir. 2006), cert. denied sub nom, Pacific Gas & Elec. Co. v. San Luis Obispo Mothers for Peace, 127 S.Ct. 1124 (2007) (questioning "NRC's assertion that a risk of terrorism cannot be quantified").

Environmental Protection Information Service ("EPIC") v. U.S. Forest Service, 451 F.3d 1005 (9th Cir. 2006) does not, as Pa'ina claims, justify the Staff's use of the unquantified term "low." Pa'ina's Answer at 26 n.4. In EPIC, the agency spent fifteen pages discussing a single potential impact, providing "at least seven different, detailed reasons" why potential short-term impacts would be "negligible." EPIC, 451 F.3d at 1013 (emphasis added). Here, in contrast, the Final EA's conclusory statements about terrorism risks give neither the public nor the decisionmaker any way to evaluate how the Staff arrived at its FONSI. See NUREG-1748, §1.6.4 (EA must "provide sufficient analysis to allow the decision maker to arrive at a conclusion").

The Final EA likewise fails to justify the Staff's statement that the risk of terrorist attack on Pa'ina's proposed irradiator is "acceptable" or even to explain what level of risk the Staff deems "acceptable." Final EA at B-7. That the Staff "assumed a successful attack on the facility" does not, as Pa'ina claims, render Concerned Citizens' contention "moot." Pa'ina's Answer at 26. The Final EA notes that "malicious use" of Cobalt-60 from the proposed irradiator "could create fear and panic, contaminate property, and require potentially costly cleanup," resulting in "radioactive contamination of several city blocks to an entire city." Final EA at B-6. Such catastrophic consequences are not generally considered "acceptable," and the Final EA fails to justify its contrary conclusion.[20]

[20] Stating the obvious – that placing up to a million curies of Cobalt-60 at the economic lifeline of the state, next to highly symbolic military targets like Pearl Harbor, and in the midst of a densely populated urban area presents an attractive target – does not, as Pa'ina suggests,

As with its assessment of the likelihood an employee would receive more than the occupational dose limit, discussed above, the Final EA fails to back up its claim the "likelihood of accidents involving exposure of workers to lethal doses" would be "low" or to quantify the allegedly "low" probability of a worker fatality. Final EA at C-10. This contention is not, as Pa'ina claims, an attack on the 10 C.F.R. Part 36 design criteria; NEPA requires evaluation of the potential impacts of lawful activities. See Pa'ina's Answer at 27. Nor does the Final EA's mere laundry list of safety features and calculation of radiation doses from normal operation of the irradiator satisfy the Staff's obligation to take a hard look at the potential for lethal exposure of workers in the event of an accident at the facility. Pa'ina's Answer at 27-28.

Pa'ina's defense of the Final EA's superficial analysis of potential impacts on tourism is yet another improper attempt to shift to the public "the burden of complying with NEPA." Duke Power Co., CLI-83-19, 17 NRC at 1048; see also Pa'ina's Answer at 28. Having received public comment expressing concern about the potential adverse effects on tourism – mainstay of Hawai'i's economy – associated with siting an irradiator at the international airport, the Staff was obliged to take a hard look at the issue and present a rigorous analysis in the Final EA of potential impacts. 40 C.F.R. § 1503.4(a). The Staff could not simply dismiss the concern with

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provide a "blueprint" for terrorist attack. Pa'ina's Answer at 26 n.5. It is not as if the Final EA's failure to acknowledge the obvious will prevent potential terrorists from learning about the opportunity the irradiator would present. In contrast, failing to evaluate these obvious factors to determine the proposed irradiator's vulnerability to, and to assess the likely consequences of, an attack, as the Final EA has, violates NEPA's command to "insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken." 40 C.F.R. § 1500.1(b). If the irradiator is, as Concerned Citizens believes, particularly vulnerable to terrorist attack and its catastrophic consequences, the Final EA should disclose those facts so the NRC can make a decision "based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment." Id. § 1500.1(c). In this case, Concerned Citizens contends an informed decision-making process would conclude the potential harm associated with Pa'ina's proposed irradiator far outweighs the insignificant benefits and that, consequently, the license application should be denied.

"generalized conclusory statements that the effects are not significant." Klamath-Siskiyou Wilderness Center, 387 F.3d at 996.

The foregoing discussion confirms there are numerous, genuine disputes over whether the Final EA satisfies the NRC's obligations under NEPA to "provide sufficient evidence and analysis for determining whether to prepare an [EIS] or a [FONSI]" and to "[a]id [the NRC's] compliance with [NEPA]" in the event no EIS is prepared. 40 C.F.R. § 1508.9(a)(1), (2). To resolve these disputes, the Board should admit this portion of Amended Environmental Contention #3.

C. The Final EA Must Consider Impacts From The Transportation Of Cobalt-60 To The Proposed Irradiator.

As discussed in Part III.B.3, supra, the Board's rejection of a safety contention claiming Pa'ina's application needed to address risks associated with transporting Cobalt-60 to and from the proposed irradiator did not absolve the Staff of its obligation to consider potential transportation impacts, including the potential for transportation-related accidents, in evaluating Pa'ina's proposed irradiator pursuant to NEPA. See Staff's Response at 11. The Staff's argument ignores NEPA's requirement that the EA include within the scope of its analysis all actions "connected" to the activity for which Pa'ina seeks a license. 40 C.F.R. § 1508.25(a)(1). Since Pa'ina's irradiator cannot function without regular shipments of Cobalt-60, the transportation of radioactive material to and from the site is a "connected" action whose potential impacts must be examined in the Final EA. See Final EA at 8.

Louisiana Energy Services, LLP (National Enrichment Facility), CLI-06-15, 63 NRC 687 (2006), which the Staff cites, supports admission of Concerned Citizens' contention. That case involved review of an EIS's discussion of impacts associated with the disposal of depleted

uranium. The Commission emphasized that the pending proceeding was "to license a uranium enrichment facility, not a proceeding to license a near-surface waste disposal facility." Id., slip op. at 3. The Commission nonetheless recognized that NEPA required the Staff "to consider the reasonably foreseeable environmental impacts of a proposed action, even if they are only indirect effects" and concluded that "[d]epleted uranium disposal from the proposed National Enrichment Facility would be an indirect effect." Id., slip op. at 4.

There was no question in Louisiana Energy Services that the Staff needed to discuss depleted uranium disposal in its NEPA analysis, even though licensing of a disposal facility was not involved. Id., slip op. at 14 ("NEPA requires ... that we consider 'reasonably foreseeable' indirect effects of the proposed licensing action"). Likewise, in this case, the Final EA must include an adequate analysis of potential impacts associated with transporting Cobalt-60 to and from the irradiator.

The mere existence of a generic 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. See Staff's Response at 11.[21] 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 [generic EIS] 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. The Final EA did not do this. It made no mention of the generic EIS (not even in the references), failed to disclose the calculations and data underlying its conclusion that "[t]ransportation impacts from normal operations would be

[21] While the Staff asserts a generic EIS exists that adequately analyzes potential impacts of transporting Cobalt-60 to Pa'ina's proposed irradiator, Concerned Citizens has been unable to locate the only document the Staff cites: NUREG-0161.

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 generic EIS, which meant that, during the public comment period, the public, including Concerned Citizens, was unaware of its existence and alleged relevance to evaluating Pa'ina's proposal. See Draft EA at 8. Consequently, no one was in a position to comment on whether the generic 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 the generic EIS, it was required to state, in the Draft EA, "where the earlier document is 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.

Finally, the Staff is correct in noting Concerned Citizens "made essentially the same argument with respect to the Draft EA." Staff's Response at 11. The Staff failed to remedy the Draft EA's deficiencies with respect to the analysis of transportation impacts, and, accordingly, Concerned Citizens reiterated in Amended Environmental Contention #3 its previously filed challenge to make clear the dispute is not moot. See 6/21/07 Board Order at 2.

D. The Staff Was Obliged To Evaluate All Potential Impacts Associated With Airplane Crashes And Natural Disasters.

The Staff is also correct that, in many respects, Amended Environmental Contention #3 repeats previously asserted claims regarding the Staff's failure to take a "hard look" at the potential impacts associated with airplane crashes and natural disasters involving Pa'ina's

proposed irradiator. Staff's Response at 8.[22] The Final EA's analysis differs only slightly from that set forth in the Draft EA. Since the Staff failed to avail itself of "the opportunity to address [the Draft EA's] omissions," Concerned Citizens has reasserted its claims so the Board would be aware the parties' disputes over the EA's adequacy had not been resolved "in the ordinary course of the Staff's performance of its NEPA obligations." 7/18/07 Order at 2.

Without explanation, the Staff abandons its previous concessions that Concerned Citizens' claims with respect to "analysis of debris force from potential aviation accidents" and "hurricane frequency and strength" are admissible. See 3/12/07 Staff's Response to Contentions Re: Draft EA at 10. There is no justification for this reversal, since the Final EA's analysis of these two issues repeats the Draft EA's deficient discussion nearly word-for-word, and the same expert reports the Staff previously conceded support admission of Concerned Citizens contentions are still in evidence. See id.; compare Draft EA at 9-10 with Final EA at 10-11.

The Staff's argument Concerned Citizens has not sufficiently backed up its claims the Final EA failed adequately to evaluate "earthquake risks, the size of potential tsunamis, and the effects of increased buoyancy due to inundation from a hurricane storm surge or a tsunami" reflects a fundamental misunderstanding of how the NEPA process works. Staff's Response at 9. Based on his extensive education and professional experience, Concerned Citizens' expert, Dr. Pararas-Carayannis, has identified potentially significant threats that earthquakes, hurricanes, and tsunamis pose to Pa'ina's proposed irradiator due to Pa'ina's decision to site its facility on low-lying, unconsolidated fill, next to the ocean. See generally Exh. 1: 2/07 Pararas-Carayannis

[22] Pa'ina does not address this portion of Amended Environmental Contention #3.

Report; Exh. 3: Pararas-Carayannis Dec.; Exh. 4: Pararas-Carayannis Supp. Dec.[23] His declaration then details how the Staff's "conclusions that potential seismic, tsunami and hurricane activity would have no significant impacts on public health and safety from the proposed irradiator are based on inaccurate assumptions and faulty analysis." Pararas-Carayannis Dec. ¶ 11; see also id. ¶¶ 14-34. Finally, he identifies the additional analysis the Staff must conduct in order to assess accurately the potential for natural disasters to result in significant environmental impacts.

Specifically, Dr. Pararas-Carayannis contends that the Staff based its assessment of potential tsunami runup risk on inaccurate information, failed to quantify runup potential with a proper numerical modeling study, and ignored "the most likely result of a tsunami, flooding at the proposed site." Id. ¶ 31; see also id. ¶¶ 24-30. He further notes the Staff failed completely "to consider buoyancy forces" that "can be expected to increase significantly under hurricane surge flooding conditions" or as a result of tsunami inundation and can damage the irradiator pool's integrity or allow potentially contaminated shielding water to escape. Id. ¶ 19; see also Pararas-Carayannis Report at 17. Moreover, Dr. Pararas-Carayannis points out the Staff's failure "to assess properly the risks earthquakes pose to the proposed irradiator," explaining that, to determine risks from liquefaction, the Staff must evaluate "the potential focusing effects of seismic energy on O'ahu" and take into account "the properties of unconsolidated sediments like those found at the irradiator site." Pararas-Carayannis Dec. ¶¶ 32, 34.

The Staff's suggestion that Concerned Citizens must prove conclusively that natural disasters involving Pa'ina's irradiator will cause significant harm to the environment reflects an

[23] Notably, the Final Topical Report relies on Dr. Pararas-Carayannis's work to inform its analysis of tsunamis, evincing the Staff's recognition of his expertise. See Final Topical Report at 3-4.

improper attempt to shift to the public "the burden of complying with NEPA," which lies with the Staff. Duke Power Co., CLI-83-19, 17 NRC at 1048.[24] It is the Staff's duty, not Concerned Citizens', to identify potential threats to the irradiator from natural disasters and take a "hard look" at them to determine whether significant impacts on the human environment may occur, triggering the Staff's duty to prepare an EIS. See Klamath-Siskiyou Wildlands Center, 387 F.3d at 993; see also 40 C.F.R. § 1508.9(a)(1). Concerned Citizens' expert testimony detailing the Staff's failure "to conduct standard factual and scientific site specific analysis" regarding threats from natural disasters and "to provide the analytic data necessary for any public challenge to the proposed [irradiator]" adequately substantiates its contention the Final EA's analysis of these potential impacts is deficient. Idaho Sporting Cong., 137 F.3d at 1150.

The Staff's position also ignores its obligation under NEPA to respond to comments on the Draft EA. See 40 C.F.R. § 1503.4(a). During the public comment period on the Draft EA, Concerned Citizens submitted a report from Dr. Pararas-Carayannis that identified all of the deficiencies regarding the Staff's analysis of natural disasters that Concerned Citizens now challenges in its contentions. See Exh. 1: 2/07 Pararas-Carayannis Report. The Staff was obliged to respond to these comments, by "[s]upplement[ing], improv[ing], or modify[ing] its analyses" to address the deficiencies, making "factual corrections," or, at a minimum, explaining (with supporting analysis) "why the comments do not warrant further agency response." 40 C.F.R. § 1503.4(a)(3)-(5); see also Oregon Natural Resources Council v. Marsh, 52 F.3d 1485, 1490 (9th Cir. 1995). Instead, the Staff illegally ignored Dr. Pararas-Carayannis' comments.

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[24] Indeed, even to establish on the merits that the Staff was required to prepare an EIS instead of an EA, Concerned Citizens "need not show that significant effects will in fact occur." Idaho Sporting Cong., 137 F.3d at 1150 (quoting Greenpeace Action v. Franklin, 14 F.3d 1324, 1332 (9th Cir. 1992); emphasis in Idaho Sporting Cong.). "Raising 'substantial questions whether a project may have a significant effect' is sufficient." Id. (quoting Greenpeace Action, 14 F.3d at 1332; emphasis added).

The Staff inaccurately claims Concerned Citizens raises new arguments that could have been raised in its contentions regarding the Draft EA. Staff's Response at 9. In its original contentions, Concerned Citizens expressly challenged the Staff's failure to evaluate any scenario involving the loss of irradiator pool shielding water, the potential for flying debris from an aviation accident to "breach the source assembly," releasing "radioactive Co-60 ... to the human environment," "the potential for contamination of the pool water in the event that an airplane crash breaches the sources," scenarios in which, due to a rupture in the pool lining, "water contaminated with radioactive cobalt could escape the facility, contaminating groundwater and nearby Ke'ehi Lagoon," or "the potential consequences should the impact of an airplane crashing into the facility or the ensuing fire and explosion of aviation fuel destroy all monitoring equipment and/or incapacitate irradiator personnel." 2/9/07 Contentions at 7-9; see also Exh. 1: 2/7/07 Resnikoff Report at 21; Exh. 5: 2/9/07 Resnikoff Dec. ¶¶ 17-19.[25] While Concerned Citizens initially identified these omissions in the context of its safety contentions, it later expressly incorporated its discussion of these safety issues into Environmental Contention #3, explaining that the Staff's failure to analyze these "credible scenarios under which an aircraft crash might result in exposures above regulatory limits" violated NEPA. 2/9/07 Contentions at 20. Since the Final EA did not cure the Draft's EA's defects, Concerned Citizens reiterated its original claims.

The Board should squarely reject the Staff's claim Concerned Citizens has not adequately demonstrated the need for the Final EA to consider these potential impacts from aviation accidents. Staff's Response at 10. As noted above, "the burden of complying with NEPA,"

[25] Indeed, the Staff acknowledges the original contentions included a challenge to the failure to "consider[] the possibility of water draining to the point where the source would be exposed." Staff's Response at 10.

including the duty to take a hard look at potential impacts, lies with the Staff, not Concerned Citizens. Duke Power Co., CLI-83-19, 17 NRC at 1048. The comments that Concerned Citizens and its experts submitted during the public comment period on the Draft EA identified all of the deficiencies regarding the analysis of aviation accident-related impacts that Concerned Citizens now challenges in its contentions. See Exh. 1: 2/8/07 Earthjustice Letter at 5; 2/7/07 Resnikoff Report at 21; 2/1/07 Sozen/Hoffmann Report at 6. Having been alerted to these threats from aviation accidents, the Staff was obliged to address them. 40 C.F.R. § 1503.4(a); see also Oregon Natural Resources Council, 52 F.3d at 1490. Instead, the Staff illegally ignored the comments, failing to include in the Final EA any discussion of these potential impacts.

In its original contentions, Concerned Citizens repeatedly challenged the Draft EA's complete failure to evaluate situations in which vital shielding water might drain out, resulting in radiation exposures above regulatory limits. See 2/9/07 Contentions at 8, 11, 14, 15, 20.[26] In the Final EA, the Staff responded to Concerned Citizens' critique by discussing for the first time a scenario involving a "loss of 6 feet of pool water." Final EA at 9. Since Concerned Citizens' original contention of omission was "superseded by the subsequent issuance of licensing-related documents" (here, the Final EA), Concerned Citizens properly seeks to amend Environmental Contention #3 to "challenge substantively and specifically" the Staff's decision to focus on only a six-foot loss, rather than disclose the far greater radiation exposure associated with a drop in shielding water to the level of the surrounding water table. Duke Energy Corp. (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC

[26] Concerned Citizens did not focus only on "the possibility of water draining to the point where the source would be exposed," as the Staff claims. Staff's Response at 10. Rather, Concerned Citizens emphasized the need to analyze scenarios in which a "break in the pool lining below the floor level could severely reduce shielding, threatening radiation exposure." 2/9/07 Contentions at 8 (emphasis added); see also id. at 11, 14, 15, 20.

373, 382 (2002) (quoting Duke Power Co., CLI-83-19, 17 NRC at 1050). As the Commission has previously noted with approval, "a significant change in the nature of the purported NEPA imperfection, from one focusing on comprehensive information omission to one centered on a deficient analysis of subsequently supplied information, warrants issue modification by the complaining party." Id. at 383 (quoting Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), LBP-02-2, 55 NRC 20, 30 (2002)).

The Staff's revelation that it did, in fact, "consider the effect of an 8-foot water loss," but then chose to keep the results of that analysis from the public, confirms the Final EA fails to take the requisite hard look at potential impacts. Staff's Response at 10. Having determined a loss of irradiator shielding water to the level of the surrounding water table threatened to expose workers and emergency responders to radiation doses of 8,465 millirems/hour, nearly double the annual occupational dose limit, the Staff was obliged to disclose that potentially significant impact in the Final EA. See "Microshield Summary Sheet for Loss of 8 Feet of Water Shielding" (ML072630315); Final EA at 8; see also Idaho Sporting Cong., 137 F.3d at 1151 (agency "has an obligation to notify the public"). The Staff's decision to keep under wraps the potential for radiation exposures over twenty-eight times greater than the 300 millirem/hour dose associated with the reported six-foot water loss violated NEPA's mandate to:

> ensure[] that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts [and to] guarantee[] that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision.

Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 349 (1989); see also 40 C.F.R. § 1500.1(b), (c); Final EA at 9.

The Board should not excuse the Staff's cover-up of the potential for massive radiation exposure on the grounds the Staff offers: that the Final EA's "citation to a 6-foot water loss was

used only as an 'example.'" Staff's Response at 10. Given its knowledge of the potential for exposure to a 8,465 millirem/hour dose, the Staff's decision to report only an "example" involving a 300 millirem/hour dose gave a misleading picture of potential impacts. "Agency regulations require that public information be of 'high quality' because '[a]ccurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA.'" Idaho Sporting Cong., 137 F.3d at 1151 (quoting 40 C.F.R. § 1500.1(b); emphasis and brackets in Idaho Sporting Cong.).

Finally, the Staff fails to provide any support for its speculation that debris around the pool would ensure workers and emergency responders would, in all circumstances, be safe from harmful radiation exposure in the chaos following an aviation accident or natural disaster. Staff's Response at 10. To satisfy NEPA, the Staff was required to consider situations in which inadvertent access to the ruptured pool would not be blocked by debris, an equally plausible scenario.

E. The Final EA's Analysis Of Terrorism Impacts Fails To Comply With NEPA.

1. The Staff Must Quantify Risks Or Justify Its Failure To Do So.

The Staff's claim "there is no legal requirement for the EA to include a quantitative calculation of risk" misstates the applicable standard. Id. at 12. Binding Ninth Circuit precedent establishes that, to satisfy NEPA's requirement to take a "hard look," an EA generally must provide an "objective quantification of the impacts." Klamath-Siskiyou Wilderness Center, 387 F.3d at 994. In the absence of such quantification, an EA will not pass legal muster "absent a justification regarding why more definitive information could not be provided." Id. (quoting Neighbors of Cuddy Mountain v. United States Forest Service, 137 F.3d 1372, 1380 (9th Cir 1998)).

San Luis Obispo Mothers for Peace does not, as the Staff claims, excuse the Final EA's failure to justify the absence of any "objective quantification" of terrorism-related impacts. Id. On the contrary, in that case, the Ninth Circuit stressed that "[t]he NRC's assertion that a risk of terrorism cannot be quantified is ... belied by the very existence of the Department of Homeland Security Advisory System, which provides a general assessment of the risk of terrorist attack," as well as by the NRC's own "'top to bottom' terrorism review." 449 F.3d at 1032 & n.9. Whether the Final EA's failure to quantify the risks of terrorist attack and terrorism-related impacts violates NEPA presents "a genuine dispute ... on a material issue of law," warranting admission of this portion of Amended Safety Contention #3. 10 C.F.R. § 2.309(f)(1)(vi).

2. The Final EA Failed Adequately To Evaluate Risks Of Attack.

Even if the Staff were able to carry its burden of demonstrating that "the numeric probability of a specific attack" cannot be quantified, the Final EA would still be deficient, because it failed to "assess likely modes of attack, weapons, and vulnerabilities of the facility, and the possible impact of each of these on the physical environment, including the assessment of various release scenarios." San Luis Obispo Mothers for Peace, 449 F.3d at 1031. The Staff notably does not respond to Concerned Citizens' claims regarding the Final EA's failure to take a hard look at the proposed irradiator's physical vulnerability or at specific features of the proposed irradiator site and its surroundings that make the irradiator particularly vulnerable to terrorist attack. See 9/4/07 Amended Contentions at 20-21. Instead, it focuses on only Concerned Citizens' challenge to the Final EA's failure to consider likely modes of attack, including threat scenarios to which Pa'ina's proposed irradiator would be particularly vulnerable, asserting that Concerned Citizens "fails to explain whether these scenarios are plausible." Staff's Response at 12; see also 9/4/07 Amended Contentions at 21-22.

As discussed in Part III.D, supra, the Staff's suggestion that experts commenting on an EA's analysis bear the burden to prove the likelihood of potential impacts reflects a fundamental misunderstanding of how NEPA works. During the public comment period on the Draft EA, Concerned Citizens submitted a report from Dr. Marvin Resnikoff that identified the need for the Staff to evaluate several likely modes of attack, including attacks using an aircraft, an anti-tank missile, or a shaped charge, as well as diversion of Cobalt-60 sources during transport to or from the facility and the theft of the sources from the irradiator itself. Exh. 2: 7/6/07 Resnikoff Report at 2 & n.1. At the public hearing on the Draft EA, the Staff received additional comment from nuclear physicist Richard Knox on potential modes of terrorist attack on the irradiator's sources. Exh. 6: 2/1/07 Hearing Tr. at 99 (ML070590710). The Staff was obliged to respond to these comments, by "[s]upplement[ing], improv[ing], or modify[ing] its analyses" to evaluate the various proposed modes of attack, making "factual corrections," or, at a minimum, explaining (with supporting analysis) "why the comments do not warrant further agency response." 40 C.F.R. § 1503.4(a)(3)-(5); see also Oregon Natural Resources Council, 52 F.3d at 1490. Instead, the Staff illegally failed to modify the analysis in Appendix B in any way.

3. The Final EA's Failure To Disclose Non-Safeguards Information And Analysis Violated NEPA.

Concerned Citizens recognizes that "NEPA's public disclosure requirement are expressly governed by [the Freedom of Information Act]." Weinberger v. Catholic Action of Hawaii, 454 U.S. 139, 145 (1981). That the Staff may not have to disclose all data does not, however, justify the Staff's failure to disclose in the Final EA any of the information or analysis on which it relied in concluding terrorism-related impacts would not be significant. This surely is not what the Commission intended when it instructed the Staff to "make public as much of its ...

environmental analysis as feasible." Pacific Gas & Electric Co. (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-07-11, 65 NRC 148, slip op. at 4 (Feb. 26, 2007). While the Commission recognized "it may prove necessary to withhold some facts underlying the Staff's findings and conclusions as 'safeguards information,'" it did not suggest the Staff could satisfy NEPA by putting its entire analysis of terrorism impacts in a black box, off-limits to the affected public and their elected officials. Id. (emphasis added); cf. Exh. 9: 1/30/07 Comment from Hawai'i State Senators Suzanne Chun Oakland and Gordon Trimble and Hawai'i State Representatives John Mizuno and Karl Rhoads at 2 (noting "conspicuous absen[ce]" of analysis of terrorist attacks).

In this case, the Staff identified only two documents – a March 2004 draft analysis identified in the Final EA as "SNL, 2004" and the June 6, 2003 order imposing compensatory measures ("NRC, 2003") – as containing safeguards information. Staff's Response at 14 n.10, 16 n.11.[27] The Final EA cites "SNL, 2004" only once, in support of its conclusion that "offsite release of radioactive material from radiological sabotage of the sources in the irradiator" is "unlikely." Final EA at B-5 to B-6.[28] It likewise cites the June 6, 2003 compensatory measures order only once, in reference to the NRC's requirements for security enhancements. Id. at B-3.

While the Staff's non-disclosure of the safeguards information in these two documents may be justified, that does not excuse its wholesale failure to provide any information about the

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[27] The Staff inaccurately suggests the entirety of the June 6, 2003 order is considered safeguards information. In fact, only the requirements set forth in Attachment 2 to the order are considered safeguards information. See 68 Fed. Reg. 35,458, 35,458 (June 13, 2003).

[28] This document was prepared more than a year before Pa'ina submitted its application for a materials license and, thus, clearly does not contain the analysis the Staff purports to have conducted regarding the "spectrum of threat scenarios" involving the proposed irradiator, the plausibility and likelihood of a terrorist attack on this specific facility, as well as the potential consequences should an attack be carried out in Honolulu. Id. at B-5.

generic security assessments on which its analysis of terrorist threats relied,[29] to disclose and explain the "assumptions ... regarding irradiator design and the source term" on which the Staff based its FONSI, to provide any data supporting the Staff's assertion that "immediate health effects from exposure to ... low radiation levels ... are expected to be minimal," or to disclose the methodology and data used to determine that the risk of terrorist attack involving Pa'ina's irradiator would be at an "acceptable level," including the Staff's definition of what it contends constitutes an "acceptable level." Final EA at B-5 to B-7; see 9/4/07 Amended Contentions at 23-25. Without that information, which could be provided without disclosing any safeguards information, the public has no way to assess whether the Staff fulfilled its duty under NEPA to take a hard look at terrorism-related impacts.

4. The Final EA Illegally Fails To Analyze The Significance Of Potential Consequences Of Terrorist Attack.

The Staff mischaracterizes Concerned Citizens' challenge as a mere disagreement over whether the risk of radioactive material escaping the irradiator pool in the event of a terrorist attack would or would not be "low." Staff's Response at 14. While Concerned Citizens does contest whether the Final EA contains adequate evidence and analysis to support the Staff's risk analysis (see 9/4/07 Amended Contentions at 10), the claim set forth on pages 25 and 26 of its Amended Contentions is different. This claim accepts for the sake of argument the Staff's

[29] The only document the Final EA cites regarding security assessments ("NRC, 2004") reports only that such assessments were performed at nuclear power plants. Final EA at B-3, B-4; see also "Protecting Our Nation – Since 9-11-01," U.S. Nuclear Regulatory Commission, NUREG/BR-0314 at 18-19 (Sept. 2004) (ML042650352). The document does not indicate that any generic security assessments were performed for underwater irradiators like the one Pa'ina proposes. Nor does it provide any discussion of which generic security assessments the Staff deemed applicable to Pa'ina's proposed irradiator or analysis of whether those assessments took into account the unique vulnerabilities of that facility (e.g., proximity to active runways at international airport, proximity to military and symbolic targets, easy access to proposed site).

quantification of the level of risk as "low" and then challenges the Staff's failure to discuss the significance of the environmental impacts in the allegedly "low risk" scenario in which radioactive material escapes the pool. The complete absence of such information violates NEPA's requirement to disclose "impacts which have catastrophic consequences, even if their probability of occurrence is low." 40 C.F.R. § 1502.22(b)(3).

Likewise, the Final EA fails adequately to evaluate the mayhem that would ensue in the event terrorists steal or divert Cobalt-60 sources from the proposed irradiator for use in a dirty bomb. The Staff's mere laundry list of potential consequences – which include "fear and panic," "costly cleanup," "radioactive contamination of several city blocks to an entire city," as well as immediate deaths or serious injuries – sheds no light on why the Staff concluded these impacts, which appear on their face to be horrific, would be insignificant. Final EA at B-6; see also 40 C.F.R. § 1508.27 (agency must consider "both context and intensity"). The Staff's invocation of "classified information" does not give it carte blanche to ignore NEPA's mandate to analyze potentially significant impacts and to disclose as much of its analysis as possible. Staff's Response at 15.[30] That Pa'ina seeks a license to possess up to a million curies of Cobalt-60 for an irradiator at a site adjacent to Honolulu International Airport is no secret. See, e.g., Exh. 11: "License sought for Hawaii irradiator," Nuclear News at 61-62 (Sept. 2005). With just that publicly available information, the Staff could, and legally was required to, prepare and disclose an analysis quantifying the potential consequences of a dirty bomb at least as detailed as the Federation of American Scientists' report regarding the impact of a detonating a single Cobalt-60

[30] The Staff's statement that it "has not undertaken" any analysis to "quantify the significance of the effects of a dirty bomb" suggests additional NEPA violations. Id. Even where an agency is justified in withholding information from the public, NEPA still requires the agency to "weigh[] the environmental costs of the [project] even though the project has serious security implications." San Luis Obispo Mothers for Peace, 449 F.3d at 1035.

source at the lower tip of Manhattan. See Exh. 1: Federation of American Scientists report (March/April 2002). The Staff's failure to "provide any objective quantification of the impacts" violated NEPA. Klamath-Siskiyou Wildlands Center, 387 F.3d at 994.

5. The Final EA Fails To Evaluate Reasonably Foreseeable Impacts.

In commenting on the draft of Appendix B, expert Dr. Resnikoff noted that, if radiation could not be immediately removed, large areas "would be uninhabitable for decades while the Co-60 decayed and/or buildings would need to be demolished." 7/6/07 Resnikoff Report at 5. He further noted:

> Even if it were possible to remove the radiation in the event Co-60 was detonated at the proposed Pa'ina irradiator, such a cleanup could shut down the runways of the Honolulu International Airport for weeks. A closure of vital runways could seriously affect Hawai'i's economy, which depends on air shipments for food, goods, and mail service, and could also disrupt Hawai'i's main economic engine, tourism. ... Also, whether successful in dispersing Co-60 or not, a terrorist act at the proposed irradiator would likely cause widespread panic and fear, which could adversely affect the morale and well-being of the people of Hawai'i and cause a decline in tourism.

Id. Having received these comments, the Staff was obliged to "[s]upplement, improve, or modify its analyses" to address these potential impacts or, at least, "[e]xplain why the comments do not warrant further agency response, citing the sources, authorities or reasons which support the agency's position." 40 C.F.R. § 1503.4(a)(3), (5).

While the Staff now claims that a clean-up would avoid all long-term impacts, the Final EA says no such thing. See Staff's Response at 15, Final EA at B-6. Rather, it fails completely to discuss long-term impacts of the type Dr. Resnikoff mentioned in his comments. The Staff's post hoc rationalizations cannot cure the deficiencies in the Final EA's analysis. Motor Vehicle Mfrs. Ass'n, 463 U.S. at 50. Even if the Staff believes the long-term impacts Dr. Resnikoff

mentions would not occur, it was obliged to explain the basis of its belief in the Final EA. Its failure to do so violated NEPA.[31]

As discussed in Part III.B.3, supra, because shipments of Cobalt-60 to and from Pa'ina's irradiator would occur only if the NRC issues the materials license, the shipments are a connected action, triggering the Staff's obligation to examine the potential effects of a terrorist attack on a shipment of Cobalt-60. See 40 C.F.R. § 1508.25(a)(1) (discussing "connected actions"). Moreover, as with long-term impacts, having received comments on the draft of Appendix B pointing out the need to consider these impacts, the Staff was obliged to address the comments in the Final EA. See Exh. 2: 7/9/07 Earthjustice Letter at 7; 7/6/07 Resnikoff Report at 2 n.1. The Staff's response that it was not required to evaluate impacts arising from potential terrorist attacks on sources while in transit merely confirms the existence of a dispute that warrants admission of the amended contention. See Staff's Response at 15.

6. The Final EA Improperly Relies On Mitigation Measures To Justify Its FONSI.

The Staff misconstrues this aspect of Concerned Citizens' contention as a claim the Staff was required to disclose safeguards information. Staff's Response at 16. In fact, the claim is simply that the Final EA fails to justify its conclusion that mitigation measures would reduce terrorism-related impacts to insignificance. See 9/4/07 Amended Contentions at 27-28. The only source the Final EA cites in support of its conclusion – "The Radiation Source Protection

[31] Even had the Final EA included the Staff's belated "analysis," the mere fact a clean-up would be costly does not, as the Staff baldly asserts, necessarily mean it would be effective in removing all contamination and avoiding all long-term human health, environmental and socioeconomic impacts. For example, a clean-up could not possibly eliminate impacts associated with adverse effects on morale and well-being and on Hawai'i's tourism industry, which could be severe even if a terrorist attack were unsuccessful. 7/6/07 Resnikoff Report at 5. Nor is it a given that the resources would be available to conduct a costly clean-up.

and Security Task Force Report" (Aug. 15, 2006) ("NRC, 2006") – is not considered safeguards information, and, thus, the Staff's claim it was justified in withholding information from the public is baseless. Final EA at B-6.

More importantly, the Final EA concedes that, even with full implementation of all mitigation measures, the risk from a terrorist attack on Pa'ina's proposed irradiator under the current threat environment would be only "reduce[d] ... to an acceptable level." Id. at B-7. It would not be eliminated. The Final EA fails to come to terms with this unavoidable potential for significant impacts from terrorism, which renders the Staff's FONSI unlawful. See 40 C.F.R. § 1502.22(b)(3) (must analyze "impacts which have catastrophic consequences, even if their probability of occurrence is low"). As the Ninth Circuit has consistently held, if the NRC's "action 'may have a significant effect upon the ... environment, an EIS must be prepared.'" National Parks & Conservation Ass'n v. Babbitt, 241 F.3d 722, 730 (9th Cir. 2001) (quoting Foundation for N. Am. Wild Sheep v. United States Dep't of Ag., 681 F.2d 1172, 1178 (9th Cir. 1982)); see also Idaho Sporting Cong., 137 F.3d at 1150 ("To trigger [EIS] requirement a 'plaintiff need not show that significant effects will in fact occur'"). The Board should admit the parties' dispute over the propriety of the Staff's reliance on mitigation measures to conclude terrorism-related impacts would be insignificant to resolve this "material issue of law." 10 C.F.R. § 2.309(f)(1)(vi).

F. The Final EA's Failure To Consider Impacts From Human Consumption Of Irradiated Food Violated NEPA.

In ruling on Concerned Citizens' initial environmental contentions, the Board determined that "the possible health effects of irradiating papayas and mangos does not arise to the level of special circumstances necessary to invoke the exception under 10 C.F.R. § 51.22(b) for the

categorical exclusion of irradiators." Pa'ina Hawaii, LLC (Material License Application), LBP-06-04, 63 NRC 99, 114-15 (2006). In other words, the Board held the potential human health impacts from consuming food irradiated at Pa'ina's facility did not trigger the Staff's obligation to prepare an EA. The Staff and Pa'ina fail to appreciate that Amended Environmental Contention #3 poses a very different question, which the Board has not previously addressed: whether, once the Staff has decided to prepare an EA, NEPA mandates that its analysis consider the impacts of increasing the supply of irradiated food for human consumption.

For the reasons set forth in its moving papers, Concerned Citizens submits that, under controlling Ninth Circuit law, the Final EA's failure to analyze these impacts violated NEPA. See 9/4/07 Amended Contentions at 29-30.[32] That other federal agencies have regulatory authority over irradiated food does not excuse the NRC from evaluating the impacts associated with human consumption of the food that would be irradiated at Pa'ina's facility. See Southern Oregon Citizens Against Toxic Sprays, Inc. v. Clark, 720 F.2d 1475, 1479-80 (9th Cir. 1983); Calvert Cliffs' Coord. Comm. v. Atomic Energy Comm'n, 449 F.2d 1109, 1123 (D.C. Cir. 1971). To resolve the parties' dispute over this "material issue of law," the Board should admit this aspect of Amended Safety Contention #3. 10 C.F.R. § 2.309(f)(1)(vi).

IV. ADMISSION OF AMENDED ENVIRONMENTAL CONTENTION #4 IS NECESSARY TO DETERMINE WHETHER THE FINAL EA COMPLIES WITH NEPA'S MANDATE TO CONSIDER REASONABLE ALTERNATIVES

To comply with NEPA, the Final EA must apprise the NRC and the public of reasonable alternatives to Pa'ina's proposed irradiator that "might be pursued with less environmental

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[32] The Staff correctly notes "[t]his portion of Amended Environmental Contention #3 is identical to a portion of the original Environmental Contention #3." Staff's Response at 17. Since "[n]either the Draft EA nor the Final EA discusses impacts associated with irradiating food for human consumption," Concerned Citizens has reiterated its original challenge to signify that it is not moot. Id.

harm." Lands Council, 395 F.3d at 1027. The discussion of alternatives must be "sufficiently detailed ... so as to permit informed decision making," id., and to foster "informed public participation." California v. Block, 690 F.2d 753, 767 (9th Cir. 1982); see also Morongo Band of Mission Indians v. Federal Aviation Admin., 161 F.3d 569, 575 (9th Cir. 1998). For the reasons set forth in Concerned Citizens' moving papers, the cramped discussion of alternatives in the Final EA – which fails to quantify the impacts or benefits of taking no action or using the two treatment alternatives it does mention,[33] does not analyze the most analogous alternate technology (electron-beam irradiation), and does not consider any alternate locations where the irradiator might be safe from aviation accidents and natural disasters – falls far short of the satisfying the Staff's legal obligations. See 9/4/07 Amended Contentions at 30-34. While the Staff and Pa'ina may dispute the merits of Concerned Citizens' claims, resolution of the parties' disputes "is not the appropriate subject of [the Board's] inquiry at the contention admission stage of the proceeding." Pa'ina Hawaii, LBP-06-04, 63 NRC at 112.

The fact that an electron-beam irradiator is already up and running in Hawai'i, performing the identical tasks Pa'ina plans to carry out, should have dispelled the Staff's alleged doubts whether "use of an electron-beam irradiator would be reasonable in the present case." Staff's Response at 18; see also Final EA at 6. In any event, the Staff may not shift to Concerned Citizens the burden of analyzing whether an electron-beam irradiator would be a reasonable alternative. Rather, having received comments on the Draft EA urging consideration of an electron-beam irradiator, the Staff was legally obliged either to evaluate this alternative, which

[33] Notably, neither the Staff nor Pa'ina even attempt to refute Concerned Citizens' contention that the Final EA's cursory discussion of the methyl bromide gas and heat treatment alternatives failed to "[r]igorously explore and objectively evaluate" the relative environmental costs and benefits of using these technologies in lieu of building and operating a Co-60 irradiator. Morongo Band of Mission Indians, 161 F.3d at 575 (quoting 40 C.F.R. § 1502.14).

was "not previously given serious consideration by the agency" or "[e]xplain why the comments do not warrant further response." 40 C.F.R. § 1503.4(a)(2), (5); see also 2/8/07 Earthjustice Letter at 8; Thompson Dec. ¶ VI-2; Oregon Natural Resources Council Action v. U.S. Forest Service, 445 F.Supp.2d 1211, 1229 (D. Or. 2006) (agency must respond to comments on inadequacy of alternatives analysis); Sierra Club v. Watkins, 808 F.Supp. 852, 873 (D.D.C. 1991) (agency "should have explained why these alternatives were not appropriate in the EA").

The Board should squarely reject Pa'ina's post hoc rationalizations for the Staff's failure to evaluate the electron-beam irradiator alternative. See Pa'ina's Answer at 30 n.6. "It is well-established that an agency's action must be upheld, if at all, on the basis articulated by the agency itself." Motor Vehicle Mfrs. Ass'n, 463 U.S. at 50. The Staff "submitted no reasons at all" for refusing to consider an electron-beam irradiator, rendering its Final EA deficient. Id.

The Board should admit Amended Environmental Contention #4 to resolve the parties' dispute over whether the absence of any consideration of an electron-beam alternative, as well as the cursory treatment afforded other alternate technologies, means the Final EA fails the basic test of "foster[ing] informed decision-making and informed public participation." Block, 690 F.2d at 767.

Admission of Amended Environmental Contention #4 is likewise justified to consider whether the Staff's refusal to consider any alternate sites for the irradiator violated NEPA. The evidence Concerned Citizens submitted with its moving papers makes clear that even Pa'ina recognizes there are alternate locations where it could undertake its project, including ones that might present "commercial advantages" over the airport location. Exh. 7: 8/28/06 Email from M. Kohn to J. Whitten at 1 (ML062770248). The fact that Pa'ina has "entertain[ed] the idea of changing the proposed location from that listed in the license application" disproves the Staff's

and Pa'ina's assertions that the proposed site is the only feasible one. Id.[34] At a minimum, therefore, the Final EA should have analyzed the alternative of siting the irradiator on Ualena Street, which has "several commercial buildings that would be acceptable to Pa'ina." 8/28/06 Kohn Email at 1.[35] Because this location is "further from an active runway and further from the ocean," id., such an alternative may well accomplish the goals of the project "with less environmental harm." Lands Council, 395 F.3d at 1027; see also Pararas-Carayannis Dec. ¶ 13. The NRC, and the public, will know for certain only when the Staff complies with its duty to consider alternate siting locations.

Concerned Citizens' discussion of the Ualena Street alternative in its moving papers refutes Pa'ina's claim Concerned Citizens has not identified "even one suitable alternative site" the Final EA should have considered. Pa'ina's Answer at 30. That said, none of the authorities Pa'ina cites supports its argument that Concerned Citizens must identify specific parcels that would be appropriate for the Staff to study.[36] Amended Environmental Contention #4 identifies with adequate specificity the types of alternate sites that would "avoid or minimize adverse effects of [Pa'ina's] actions upon the quality of the human environment," and, thus, should have

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[34] Since "the evaluation of 'alternatives' mandated by NEPA is to be an evaluation of alternative means to accomplish the general goal of an action" and "not an evaluation of the alternative means by which a particular applicant can reach his goals," whether Pa'ina subjectively would be willing to consider another location is irrelevant to defining the range of reasonable alternatives. Van Abbema, 807 F.2d at 638.

[35] Consideration of alternative sites seems only prudent since "there are no guarantees that the proposed [airport] location will still be available at the end of the [NRC] process." Id.

[36] Concerned Citizens fails to see the relevance of Goodman Group, Inc. v. Dishroom, 679 F.2d 182 (9th Cir. 1982), which Pa'ina cites in defense of the Staff's refusal to consider alternate locations for the proposed irradiator. Pa'ina's Answer at 31. That case stands for the limited proposition that compliance with local land-use and zoning laws is "a factor" supporting a FONSI. Goodman Group, 679 F.2d at 186. Compliance with land-use laws does not conclusively resolve the issue whether an EIS is required, as there are many other "significance" criteria. See 40 C.F.R. § 1508.27.

been evaluated in the Final EA. 40 C.F.R. § 1500.2(e); see also 9/4/07 Amended Contentions at 33.[37]

Unlike the defendant agency in Morongo Band of Mission Indians, the Staff failed to develop or discuss any alternate sites for the proposed irradiator, violating its duty under NEPA to "study, develop, and describe appropriate alternatives." 161 F.3d at 576 (quoting 42 U.S.C. § 4332(2)(E)). As the Ninth Circuit recently held in 'Ilio'ulaokalani Coalition v. Rumsfeld, 464 F.3d 1083 (9th Cir. 2006), where a project's purpose "is not, by its own terms, tied to a specific parcel of land," an agency's categorical refusal to consider any alternate locations violates NEPA. Id. at 1098 (quoting Methow Valley Citizens Council v. Regional Forester, 833 F.2d 810, 815 (9th Cir. 1987); emphasis in 'Ilio'ulaokalani Coalition). Even if the Final EA were justified in limiting the scope of its analysis to "[a] treatment facility on Oahu," the Staff was obliged to consider locations other than the specific airport parcel Pa'ina proposes, which might accomplish the project's purpose with fewer impacts. Final EA at 6 (emphasis added).[38]

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[37] There is no support for Pa'ina's suggestion there are no sites currently zoned for industrial use on O'ahu that are far from active runways, away from the ocean's edge and on solid ground. See Pa'ina's Answer at 31. On the contrary, Pa'ina's consideration of alternate locations on Ualena Street confirms that neither land-use policy nor zoning laws would need to be altered to move the proposed irradiator away from at least some of the unique threats inherent in the airport site.

[38] As discussed in Concerned Citizens' moving papers, virtually every fruit producer who testified and indicated a desire to use Pa'ina's irradiator came from Hawai'i Island, calling into question the Final EA's assumption an O'ahu location would be preferable. 9/4/07 Amended Contentions at 33 n.10.

V. THE BOARD SHOULD ADMIT AMENDED ENVIRONMENTAL CONTENTION #5 TO RESOLVE THE PARTIES' DISPUTES ABOUT WHETHER AN EIS IS REQUIRED

In its moving papers, Concerned Citizens provided the requisite "concise statement" of facts and applicable law in support of its claim the Staff violated NEPA by issuing a FONSI rather than proceeding with preparation of an EIS for Pa'ina's proposed irradiator. 10 C.F.R. § 2.309(f)(1)(v); see also 9/4/07 Amended Contentions at 34-36. In response, Pa'ina and the Staff attempt to disprove the merits of Concerned Citizens' contentions.[39] Resolution of the parties' disputes "is not," however, "the appropriate subject of [the Board's] inquiry at the contention admission stage of the proceeding." Pa'ina Hawaii, LBP-06-04, 63 NRC at 112. Rather, admission of Amended Environmental Contention #5 is warranted to resolve the parties' dispute over whether the Staff was obliged to prepare an EIS.

[39] Pa'ina's narrow focus on how many of the people in attendance at the February 1, 2007 public were "for" or "against" the irradiator is completely irrelevant, as the determination whether a project is "highly controversial" for purposes of NEPA has nothing to do with the existence or non-existence of mere "opposition to a use." Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1212 (9th Cir. 1998), cert. denied sub nom Malheur Lumber Co. v. Blue Mountains Biodiversity Project, 527 U.S. 1003 (1999). Since Concerned Citizens has "produced evidence from numerous experts showing the [EA's] inadequacies and casting serious doubt on the [agency's] conclusions," the Ninth Circuit has indicated "[t]his is precisely the type of 'controversial' action for which an EIS must be prepared." Id. (quoting Sierra Club v. United States Forest Serv., 843 F.2d 1190, 1193 (9th Cir. 1988)).

VI. CONCLUSION

For the foregoing reasons, Concerned Citizens respectfully asks the Board to admit the amended environmental contentions filed herein on September 4, 2007.

Dated at Honolulu, Hawai'i, October 1, 2007.

Respectfully submitted,

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

SUPPLEMENTAL DECLARATION OF DAVID L. HENKIN

I, David L. Henkin, declare:

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

2. I make this supplemental declaration in support of Concerned Citizens' Amended Environmental Contentions #3 Through #5. This declaration is based on my personal knowledge, and I am competent to testify about the matters contained herein.

3. Attached hereto as Exhibit "11" is a true and correct copy of an article entitled "License sought for Hawaii irradiator," which appeared in the September 2005 issue of Nuclear News.

4. On September 20, 2007, I received via electronic mail the Nuclear Regulatory Commission Staff's Response to Concerned Citizens' Amended Environmental Contentions #3 through #5. Immediately thereafter, I received an electronic mail message from Staff counsel Michael Clark noting that, on page 10 of the Response, the Staff had referred to a document entitled "Microshield Summary Sheet for Loss of 8 Feet of Water Shielding," which Mr. Clark

indicated had a run date of May 9, 2007, with results verified on September 17, 2007. Mr. Clark offered to provide a copy of this document upon request, an offer we immediately accepted.

5. Prior to receipt of the Staff's Response and Mr. Clark's email on September 20, 2007, Concerned Citizens was completely unaware the Staff had performed microshield calculations regarding a loss of eight feet of shielding water from Pa'ina's proposed irradiator. Those calculations were not disclosed in either the draft or final environmental assessment, were not available on ADAMS, and had not been included in the hearing file.

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

Dated at Honolulu, Hawai'i, October 1, 2007.

DAVID L. HENKIN

SOURCE MATERIAL

NRC tracking system rule proposed

Upon publication in the July 28 Federal Register, the proposed rule was opened to public comment through October 11.

FOLLOWING ON ITS announcement of intent in July (*NN*, Aug. 2005, p. 124), the Nuclear Regulatory Commission has issued proposed amendments to 10 CFR Parts 20, 32, and 150 that would establish a national tracking system for radioactive source materials. If ultimately approved in final form, the amendments would require licensees to report information on the manufacture, transfer, receipt, and disposal of sources that include any of 20 different radioisotopes. Excluded from the tracking system would be material encapsulated for disposal or contained in any fuel assembly, subassembly, fuel rod, or fuel pellet, substances that are generally monitored through other systems and regulations.

The tracking system is intended to conform with revisions to the International Atomic Energy Agency's (IAEA) code of conduct on source safety and security and to address concerns about the possible use of diverted source material in radiological dispersal devices (or "dirty bombs"). The NRC and the Department of Energy jointly issued a report in May 2003, *Radiological Dispersal Devices: An Initial Study to Identify Radioactive Materials of Greatest Concern and Approaches to Their Tracking, Tagging, and Disposition* (*NN*, July 2003, p. 31). That report recommended the creation of a tracking system so that regulators could better understand and monitor the location and movement of those sources and materials categorized as being "of interest".

A source would be tracked not only by the radioisotopes it contains but also by its level of activity. Category 1 would include any source with radioactivity greater than or equal to a threshold for that isotope listed in the IAEA code of conduct; Category 2 would include any source less active than the Category 1 threshold, but more active than a lower threshold in the code of conduct. The proposed rule does not seek to require tracking of sources below the Category 2 threshold (these sources would be considered to belong in Category 3), but the NRC has stated that it might consider adding some Category 3 sources to the system in a future rulemaking if it is decided that a licensee with a large number of Category 3 sources might be a security concern. Although there can be exceptions, Category 1 sources are usually used in radiothermal generators and irradiators and in radiation teletherapy, while Category 2 sources are commonly employed in industrial gamma radiography, blood irradiation, and, sometimes, well logging.

Licensees could report data to the tracking system in a variety of ways, although the NRC expects that most will find the online option the most convenient. The tracking system would entail password protection for licensee reporting. At startup, each licensee would report its current source inventory to the system. Under the proposal, licensees would report all of their Category 1 source data by December 31, 2006, and all Category 2 source data by March 31, 2007. Thereafter, every new source would be logged into the system at the time of its manufacture, and licensees would provide new data to the system whenever a source is sold (or otherwise transferred to a different licensee) or moved to a different location (as its normal storage point, not in temporary movements to job sites). There would also be requirements to be met for the export or import of sources.

The system would also track sources if they have decayed to the point of no longer being useful and are then recycled and reconfigured. Reactivation of a source, through irradiation in a reactor, would keep it in the tracking system, with the same serial number but a new activity (which would have to be reported to the system, along with the date of reactivation).

The NRC has no legal authority to regulate radium-226, so its reporting to the tracking system would not be required. The NRC has stated, however, that the tracking system would be able to receive information on Ra-226 if it is provided on a voluntary basis. The tracking system will require licensees who possess thorium or plutonium to report data to both the National Source Tracking System and to an existing database kept by the NRC's Office of Nuclear Materials Safety and Safeguards.

The radionuclides to be reported to the tracking system are actinium-227, americium-241 (by itself and with beryllium), californium-252, cobalt-60, curium-244, cesium-137, gadolinium-153, iridium-192, plutonium-236, -238, -239 (by itself and with beryllium), and -240, polonium-210, promethium-147, selenium-75, strontium-90, thorium-228 and -229, thulium-170, and ytterbium-169. The thresholds between Categories 1 and 2 range from 540 to 1.1 million curies.

Comments on the proposal, which was published in the July 28 *Federal Register*, will be received through October 11 by the Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attn.: Rulemakings and Adjudications Staff, or via e-mail to <secy@nrc.gov>.

FOOD IRRADIATION

License sought for Hawaii irradiator

A company called Pa'ina Hawaii, LLC, has applied to the Nuclear Regulatory Commission for a license to build and operate a pool-type industrial irradiator that would be used to sterilize fruits and vegetables bound for the American mainland. The application

EXHIBIT 11

has reached the stage at which the NRC has issued a public notice and opened the opportunity for requests for a hearing. The notice was published in the August 2 *Federal Register*, with a deadline of October 3 for hearing requests.

Pa'ina Hawaii, LLC, is proposing to build its irradiator adjacent to Honolulu International Airport. The company is owned by Michael Kohn, the owner of Hawaii Fruit Company, but the irradiator would be made available to any prospective customer, and its license would also allow irradiation of cosmetics and pharmaceuticals. The only large-scale irradiator currently operating in Hawaii is on the "big island" (also named Hawaii), and it is economically impractical for it to be used by food producers on Oahu and other Hawaiian islands. The planned irradiator, the Genesis model manufactured by Gray-Star, would use a 1 million-curie cobalt-60 source in a pool 22 feet deep.

Hearing requests will be received by the Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attn.: Rulemakings and Adjudications Branch. Requests may also be submitted via e-mail to <hearingdocket@nrc.gov>.

BRACHYTHERAPY

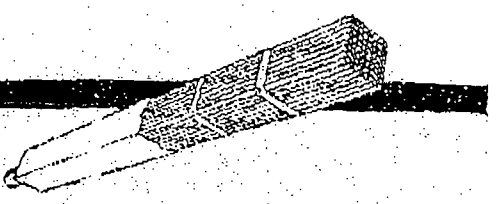
Polymer-encased Pd-103 seed implanted

In July, a new variety of brachytherapy seed was implanted in a patient for the first time. The seed, incorporating palladium-103, is encased in a polymer sheath instead of metal for greater compatibility with living tissues, more uniform distribution of radiation, and better post-implant imaging. The seed was implanted at a medical center in the United States, but the center's location and the treatment being provided were not disclosed.

Brachytherapy involves the placement of a radiation source adjacent to or within a tumor so that the radiation kills the cancerous cells but leaves the surrounding healthy tissue unaffected. In recent years, the primary use for brachytherapy has been the treatment of prostate cancer. Pd-103 has a half-life of 17 days, decaying by electron capture to rhodium-103. Its main emission is a gamma ray of about 40 keV.

The polymer-coated implant was developed by International Brachytherapy s.a., based in Belgium. The implant's trade name is OptiSeed103™. NN

Fuel



AMERICAN CENTRIFUGE

USEC posts new schedule for lead cascade startup

Problems with materials quality and in meeting regulatory compliance has pushed startup of USEC's lead cascade demonstration program to next year.

Problems with materials quality, performance issues of certain components, and delays in meeting regulatory compliance have postponed the start of operations of USEC Inc.'s lead cascade demonstration program. The lead cascade, designed to gather performance data for the company's proposed commercial uranium enrichment plant, was expected to start up before the end of 2005. It is now expected to begin operating and providing data in the first half of 2006, USEC announced on August 3.

The lead cascade, consisting of up to 240 gas centrifuge machines operating in closed-loop configuration, will recycle the enriched and depleted uranium that it produces. The only uranium withdrawals will be in the form of small samples. This enrichment scheme is built on technology originally developed by the Department of Energy.

Operation of the lead cascade will represent the demonstration phase of what USEC calls its American Centrifuge project. After the demonstration phase, USEC expects to follow up with the commercial deployment phase in which the commercial American Centrifuge plant would have a capacity of 3.5 million separative work units (SWU) per year, with an upper U-235 enrichment limit of 10 percent. USEC submitted a license application to the Nuclear Regulatory Commission for the commercial plant in August 2004.

The lead cascade and the commercial plant will be primarily housed in an existing gas centrifuge enrichment plant located at the DOE's Portsmouth Gaseous Diffusion Plant in Piketon, Ohio.

USEC said it expects to begin construction of the commercial American Centrifuge plant in 2007, reaching the annual production capacity of 3.5 million SWU by 2010. The cost of the plant is estimated at about $1.7 billion (previously reported at about $1.0 million for centrifuge demonstration costs and up to $1.5 billion for plant

CERTIFICATE OF SERVICE

The undersigned hereby certifies that, on October 1, 2007, a true and correct copy of the foregoing document was duly served on the following via e-mail and first-class United States mail, postage prepaid:

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Office of the Secretary
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Washington, DC 20555-0001
Attn: Rulemakings & Adjudications Staff
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Michael J. Clark
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In addition, the undersigned hereby certifies that, on October 1, 2007, a true and correct copy of the foregoing document was duly served on the following via e-mail:

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Dated at Honolulu, Hawai'i, October 1, 2007.

DAVID L. HENKIN
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Concerned Citizens of Honolulu

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Because the earth needs a good lawyer

BOZEMAN, MONTANA DENVER, COLORADO HONOLULU, HAWAI'I
INTERNATIONAL JUNEAU, ALASKA OAKLAND, CALIFORNIA
SEATTLE, WASHINGTON TALLAHASSEE, FLORIDA WASHINGTON, D.C.

TRANSMITTAL LETTER

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

FROM: David L. Henkin

DATE: October 1, 2007

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

ENCLOSURES	DATE	DESCRIPTION
Original and two copies:	10/1/07	INTERVENOR CONCERNED CITIZENS OF HONOLULU'S REPLY IN SUPPORT OF ITS AMENDED ENVIRONMENTAL CONTENTIONS #3 THROUGH #5

[ ] For Your Information.
[X] For Your Files.
[ ] Per Our Conversation.
[ ] Per Your Request.
[ ] For Review and Comments.
[ ] See Remarks Below.

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[ ] For Signature & Return.
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[ ] For Signature & Forwarding.

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