

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of)	
)	
PA'INA HAWAII, LLC.)	Docket No. 30-36974-ML
)	
Material License Application)	ASLBP No. 06-843-01-ML

NRC STAFF'S PETITION FOR REVIEW OF BOARD'S INITIAL DECISION

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TABLE OF CONTENTS

TABLE OF AUTHORITIES ii

I. INTRODUCTION 1

II. BACKGROUND 2

III. DISCUSSION..... 7

 A. The Board Erred in Directing the Staff to Further Analyze the Consequences of Transportation Accidents..... 8

 1. The Board Committed Prejudicial Procedural Error When Considering Dr. Resnikoff’s Affidavit 9

 2. The Board Ignored Established Law Limiting the Types of Impacts an Agency Must Consider under NEPA..... 11

 3. Contrary to the Board’s Finding, NEPA Law Establishes that the Licensing of Pa’ina’s Irradiator and Any Impacts from Source Shipments to the Irradiator are Not “Connected Actions” 13

 B. The Board Failed to Properly Consider Evidence Relating to the Electron-Beam Alternative 15

 C. The Board Failed to Apply NEPA’s Rule of Reason in Finding that the Staff Must Consider Alternative Sites for Pa’ina’s Irradiator..... 19

 D. The Board Based Its Finding that the Staff Must Circulate a Draft EA Supplement for Public Comment on Erroneous Factual and Legal Conclusions 23

IV. CONCLUSION..... 25

ATTACHMENT 1 – AFFIDAVIT OF EARL P. EASTON

TABLE OF AUTHORITIES

JUDICIAL DECISIONS

U.S. SUPREME COURT

Vt. Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519 (1978)..... 20

U.S. COURTS OF APPEALS

Akiak Community v. U.S. Postal Serv., 213 F.3d 1140 (9th Cir. 2005)..... 23

Bering Strait Citizens for Responsible Res. Dev. v. U.S. Army Corps. of Eng’rs, 524 F.3d 938 (9th Cir. 2008) 24

Highway J Citizens Group v. Mineta, 349 F.3d 938 (7th Cir. 2003)..... 20, 23

La. Crawfish Producers Ass’n v. Rowan, 463 F. 3d 352 (5th Cir. 2006)..... 20, 23

Native Ecosystems Council v. U.S. Forest Service, 428 F. 3d 1233 (9th Cir. 2005)
..... 20, 23

NRDC v. Morton, 458 F.2d 827 (D.C. Cir. 1982) 20

N. Idaho Cmty. Action Network v. U.S. DOT, 545 F.3d 1147 (9th Cir. 2008) 16

Rattlesnake Coalition v. U.S. EPA, 509 F.3d 1095 (9th Cir. 2007)..... 13

River Rd. Alliance, Inc. v. U.S. Army Corps of Eng’rs, 764 F.2d 445 (7th Cir. 1985)
..... 20, 23

Trout Unlimited v. Morton, 509 F.2d 1276 (9th Cir. 1974)..... 11, 13

Warm Springs Dam Task Force v. Gribble, 621 F.2d 1017 (9th Cir. 1980) 11, 13

U.S. DISTRICT COURTS

City of Dallas v. Hall, 2008 U.S. Dist. LEXIS 49944 (N.D. Tex. 2008)..... 20

ADMINISTRATIVE DECISIONS

COMMISSION DECISIONS

Hydro Res., Inc. (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-04, 53 NRC 31 (2001)
..... 18

La. Energy Servs., L.P. (Claiborne Enrichment Ctr.), CLI-98-3, 47 NRC 77 (1998)
..... 18

Dominion Nuclear N. Anna, LLC (Early Site Permit for N. Anna ESP Site), CLI-07-27, 66 NRC 215 (2007) 20

Pacific Gas & Elec. Co. (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-08-26, 68 NRC 509 (2008) 18

ATOMIC SAFETY AND LICENSING BOARD DECISIONS AND ORDERS

Nuclear Fuel Services, Inc. (Erwin, Tennessee) LBP-05-8, 61 NRC 202 (2005) 18

Paina Hawaii, LLC, Initial Decision (Ruling on Concerned Citizens of Honolulu Amended Environmental Contentions #3, #4, and #5) (August 27, 2009)*passim*

Pa’ina Hawaii, LLC, LBP-06-04, 63 NRC 99 (January 24, 2006).....2

Pa’ina Hawaii, LLC, Order (Confirming Oral Ruling Granting Motion to Dismiss Contentions) (April 27, 2006) (unpublished).....3

Pa’ina Hawaii, LLC, Order (Ruling on Admissibility of Intervenor’s Amended Environmental Contentions) (December 21, 2007) (unpublished).....3, 4

Pa’ina Hawaii, LLC, Order (Ruling on Intervenor’s Motion to Strike Testimony, Releasing Previously Reserved Hearing Dates, and Directing Parties to Submit Scheduling Information for Hearing) (December 4, 2008) (unpublished)4

Pa’ina Hawaii, LLC, Order (Scheduling Order) (July 17, 2008) 4

Pa’ina Hawaii, LLC, Order (Denying Intervenor’s Motion to Clarify) (September 29, 2009) 23

Toledo Edison Co. (Davis Bessie Nuclear Power Station, Unit 1) LBP-87-11, 25 NRC 287 (1987) 18

U.S. Dep’t of Energy (High Level Waste Repository), LBP-09-06, 69 NRC ____ (May 11, 2009) (slip op.) 14

STATUTES

National Environmental Policy Act, 42 U.S.C. §§ 4321 *et. seq.**passim*

REGULATIONS

10 C.F.R. § 2.309(f)(1)(vi) 10

10 C.F.R. § 2.341(b)(4)*passim*

10 C.F.R. Part 36 22

10 C.F.R. § 51.22(b) 2

10 C.F.R. § 51.22(c)(14)(vii) 2

10 C.F.R. § 51.30..... 16

10 C.F.R. Part 71 14

40 C.F.R. § 1508.4..... 21

40 C.F.R. § 1508.25(a)(1)..... 8, 15

40 C.F.R. § 1508.8(b) 11, 15

FEDERAL REGISTER

License and Radiation Safety Requirements for Irradiators, (Final rule),
58 Fed. Reg. 7715 (February 9, 1993) 22

OTHER AUTHORITIES

*Shipments of Fuel from Long Island Power Authority’s Shoreham Nuclear Power
Station to Philadelphia Electric Company’s Limerick Generating Station, (Office of Nuclear
Materials Safety and Safeguards) (Opinion of Robert M. Bernero, Director) 38 NRC 365
(December 23, 1993) 13*

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NRC STAFF'S PETITION FOR REVIEW OF BOARD'S INITIAL DECISION

I. Introduction

The NRC Staff petitions the Commission to review the Board's initial decision on amended environmental contentions 3, 4 and 5.¹ For reasons stated below, the Commission should review three portions of the initial decision in which the Board found that the Staff failed to comply with the requirements of the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. §§ 4321 *et seq.* In these portions the Board found that, in the final environmental assessment (EA) for Pa'ina's irradiator, the Staff did not adequately address transportation accidents, the alternative technology of electron-beam irradiation, and alternative sites. The Board remanded the EA to the Staff for supplementation in these areas. The Commission should review the Board's rulings because the Board made prejudicial procedural errors, failed to apply established law in ruling on a number of issues, and made at least one clearly erroneous finding of material fact.

¹ Initial Decision (Ruling on Concerned Citizens of Honolulu Amended Environmental Contentions #3, #4, and #5) (August 27, 2009).

II. Background

On June 23, 2005, Pa'ina filed an application for a license to possess and use byproduct material in an underwater irradiator adjacent to Honolulu International Airport (HNL). NRC regulations categorically exclude irradiators from NEPA review. 10 C.F.R. § 51.22(c)(14)(vii). In its hearing request filed October 3, 2005, however, the Intervenor challenged the categorical exclusion for Pa'ina's irradiator and argued that the Staff must prepare an EA or Environmental Impact Statement (EIS). The Intervenor argued in environmental contention 1 that the Staff improperly invoked the categorical exclusion by failing to explain why risks associated with aircraft crashes, tsunamis and hurricanes at HNL do not constitute "special circumstances" such that, under 10 C.F.R. § 51.22(b), the categorical exclusion does not apply to Pa'ina's irradiator. In environmental contention 2, the Intervenor argued that these same risks require the Staff to prepare an EA or EIS. In January 2006, the Board admitted contention 1 in its entirety and the portion of contention 2 arguing that the Staff had to prepare an EA.²

On March 20, 2006, the Staff and the Intervenor entered into a joint stipulation under which the Staff agreed to prepare an EA. The Staff also agreed that before issuing any final finding of no significant impact (FONSI) it would issue a draft FONSI for public comment and hold at least one public meeting in Honolulu. Under the stipulation the Intervenor agreed to not oppose dismissal of its environmental contentions but reserved the right to file additional

² *Pa'ina Hawaii, LLC*, LBP-06-4, 63 NRC 99 (2006). In a March 2006 Order, the Board also admitted several safety contentions. Those contentions have since been dismissed, along with other safety contentions the Intervenor subsequently filed.

contentions challenging the adequacy of the EA. The Board approved the stipulation and dismissed environmental contentions 1 and 2.³

Based on its own analyses and those of the Center for Nuclear Waste Regulatory Analyses (CNWRA), the Staff found that licensing Pa'ina's irradiator would not result in any significant environmental impacts. The Staff issued its draft EA and FONSI on December 21, 2006; provided a public comment period between December 28, 2006 and February 8, 2007; and held a public meeting in Honolulu on February 1, 2007.

On August 10, 2007, the Staff issued the final EA and FONSI. On August 17, 2007, the Staff issued NRC License No. 53-29296-01, authorizing Pa'ina to possess and use byproduct material in connection with its proposed irradiator.

On September 4, 2007, the Intervenor filed amended environmental contentions 3 through 5. In amended environmental contention 3, the Intervenor argued that in the final EA the Staff failed to take a "hard look" at the environmental impacts of Pa'ina's irradiator with respect to issues such as aircraft crashes, natural phenomena, terrorism, and the transportation of cobalt-60 sources to the irradiator. In amended environmental contention 4, the Intervenor argued that the Staff's analysis of alternative technologies in the EA was inadequate and that the Staff improperly failed to consider alternative sites. In amended environmental contention 5, the Intervenor argued that the Staff must prepare an EIS.

On December 21, 2007, the Board issued an order admitting a number of portions of amended environmental contentions 3 and 4, while rejecting other portions.⁴ The Board

³ Order (Confirming Oral Ruling Granting Motion to Dismiss Contentions) (April 27, 2006).

⁴ Order (Ruling on Admissibility of Intervenor's Amended Environmental Contentions) (December 21, 2007).

deferred ruling on amended environmental contention 5, stating that it would revisit this contention once it reached a decision on the adequacy of the EA.⁵

On July 17, 2008, the Board issued a scheduling order for the remainder of the proceeding.⁶ On August 26, 2008, each party submitted its initial statement of position. Along with its statement, the Staff submitted testimony from six witnesses. Neither the Intervenor nor Pa'ina submitted any substantive testimony, and the Intervenor's statement was essentially a word-for-word resubmittal of its amended environmental contentions.

On September 15 and 16, 2008, the parties submitted rebuttal statements and testimony. The Intervenor's rebuttal testimony did not address all of the Staff's initial testimony, but focused on the portions of the Staff's testimony explaining how it considered aircraft crash impacts and alternative technologies when preparing the EA. Pa'ina submitted testimony from its President, Michael Kohn, addressing electron-beam irradiation, a technology the Intervenor claimed the Staff should have addressed in the EA.

In a December 4, 2008 order, the Board directed the Intervenor to submit within sixty days a "full factual and substantive written statement of position . . . rebutting and responding to the presentations of the Staff and the Applicant[.]"⁷ The Board gave the Staff and Pa'ina thirty days to respond to the Intervenor.

⁵ *Id.* at 33–34.

⁶ Order (Scheduling Order) (July 17, 2008) (unpublished).

⁷ Order (Ruling on Intervenor's Motion to Strike Testimony, Releasing Previously Reserved Hearing Dates, and Directing Parties to Submit Scheduling Information for Hearing) (December 4, 2008) (unpublished).

In its February 2, 2009 Supplemental Statement, the Intervenor set forth a new argument in support of an admitted portion of amended environmental contention 3 pertaining to transportation accidents. In its contentions, and in its Initial and Rebuttal Statements of Position, the Intervenor had argued that the Staff was required to consider accidents involving the transportation of cobalt-60 sources to Pa'ina because the operation of the irradiator and source shipments are "connected actions" under NEPA.⁸ In its Supplemental Statement the Intervenor argued for the first time that, regardless of whether or not these two actions are "connected," the Staff had to consider the environmental impacts of transportation accidents because these impacts are reasonably foreseeable effects of licensing Pa'ina's irradiator.⁹

In its March 5, 2009 response, the Staff objected to the Intervenor's attempt to introduce a new, transportation-related issue into this proceeding almost a year and a half after submitting its amended environmental contentions.¹⁰ In order to address the Intervenor's new argument, however, the Staff submitted testimony from Earl Easton, an NRC Senior Level Scientist specializing in the transportation of radioactive materials.¹¹ In his testimony Mr. Easton explained that the NRC had previously addressed potential environmental impacts associated with the transportation of cobalt-60 and other radioactive materials.¹² Mr. Easton also explained that, based on more recent data and reports, it is not reasonably foreseeable that a source

⁸ Contentions at 18, Initial Statement at 19, Rebuttal Statement at 23–24.

⁹ Supplemental Statement at 38.

¹⁰ Staff's Response to Intervenor's Supplemental Statement of Position at 34–36.

¹¹ Easton Testimony (Prefiled Staff Exh. 70).

¹² *Id.*

shipment to Pa'ina's irradiator will result in an accident involving a release of radiological material.

On April 6, 2009, the Intervenor filed an "Amendment to Environmental Contention 3 Re: Transportation Accidents." The Intervenor argued that it should be allowed to amend environmental contention 3 because Mr. Easton's testimony provided new information that was materially different than existing information. Along with its request the Intervenor submitted an affidavit from Marvin Resnikoff, Ph.D., disputing portions of Mr. Easton's testimony. The Staff opposed the Intervenor's amendment request for several reasons, foremost because the Intervenor should have sought leave to respond to Mr. Easton's testimony, rather than attempt to amend its contention.¹³

On August 27, 2009, the Board issued its initial decision. The Board stated that it would not be holding an oral hearing in this proceeding because it "has no critical factual questions for the parties[.]" Decision at 9. With respect to amended environmental contention 3, the Board found that the Staff's experts complied with NEPA by adequately considering potential environmental impacts relating to aircraft crashes, natural phenomena and terrorism. Decision at 18-47, 52-55. The sole issue on which the Board found that the Staff had not complied with NEPA involved transportation accidents. The Board found that the Staff had not shown it considered the environmental consequences of accidents that might occur during the transport of sources to Pa'ina's irradiator, and it held that the Staff must amend the EA to address this issue. Decision at 47-52.

¹³ NRC Staff's Response in Opposition to Intervenor's Amendment to Environmental Contention 3 Re: Transportation Accidents (May 1, 2009).

With respect to amended environmental contention 4, the Board found that the Staff sufficiently considered the no-action alternative and two alternative technologies but failed to adequately consider electron-beam irradiation as an alternative. Decision at 59–70, 85–100. The Board also found that the Staff failed to comply with NEPA because it did not consider alternative sites for the irradiator. Decision at 103–08. The Board directed the Staff to revise the EA to address electron-beam irradiation and alternative sites. Decision at 100–03, 108.

The Board also held that, under Ninth Circuit precedent and the terms of the March 2006 joint stipulation between the Staff and the Intervenor, the Staff must provide an opportunity for written public comment on its draft revisions to the EA. Decision at 102, 108.

The Board dismissed amended environmental contention 5, finding there is no need to prepare an EIS for Pa'ina's irradiator. Decision at 109.

III. Discussion

The Commission may grant a petition for review of a Board's decision, "giving due weight to the existence of a substantial question with respect to the following considerations":

- (i) A finding of material fact is clearly erroneous or in conflict with a finding as to the same fact in a different proceeding;
- (ii) A necessary legal conclusion is without governing precedent or is a departure from or contrary to established law;
- (iii) A substantial and important question of law, policy, or discretion has been raised;
- (iv) The conduct of the proceeding involved a prejudicial procedural error; or
- (v) Any other consideration which the Commission may deem to be in the public interest.

10 C.F.R. § 2.341(b)(4).

The Commission should grant the Staff's petition for review because the Board made several significant procedural errors prejudicial to the Staff. The Board also applied incorrect legal standards in certain instances, particularly in its review of the Staff's alternatives analyses.

Further, the Board made at least one clearly erroneous finding of material fact. Pursuant to 10 C.F.R. § 2.341(b)(4)(i), (ii) and (iv), the Commission should review the Board's rulings, take into account evidence the Board improperly failed to consider, and evaluate the Staff's analyses using the correct legal standards. When the correct standards are applied to the entire evidence of record, it is clear that the Staff complied with NEPA when preparing the Pa'ina EA.

A. The Board Erred in Directing the Staff to Further Analyze the Consequences of Transportation Accidents

In the third portion of amended environmental contention 3, the Intervenor argued that the Staff violated NEPA by failing to consider the likelihood and consequences of accidents that might occur during the annual transport of sources to and from Pa'ina's irradiator. The Intervenor argued that "[s]ince the facility could not function without regular shipments of fresh sources, impacts associated with potential transportation accidents must be evaluated in the Final EA."¹⁴ In support of its argument the Intervenor relied on 40 C.F.R. § 1508.25(a)(1), a regulation of the Council on Environmental Quality (CEQ) stating that "connected actions" should be addressed in the same NEPA document.

In its initial decision, the Board agreed with the Intervenor that "the operation of the proposed irradiator and the impacts of the transportation of Co-60 are connected actions," which must be addressed in the same EA. Decision at 49–50. The Board also found that testimony from one of the Staff's experts, Mr. Easton, failed to respond directly or sufficiently to the Intervenor's contention. Decision at 50–51. The Board directed the Staff to amend the EA so that it "provides more than conclusory assertions regarding the environmental consequences of transportation accidents." *Id.*

¹⁴ Amended Environmental Contentions (September 4, 2007) at 18.

The Commission should review and reverse the Board's rulings. The Board committed prejudicial procedural error in directing the Staff to amend the EA to respond to the transportation-related amendment to environmental contention 3. The Board also failed to apply established NEPA law under which an agency need not analyze consequences that are remote and speculative. Further, the Board failed to apply established law under which the operation of Pa'ina's irradiator and any impacts from transporting cobalt-60 sources to the irradiator cannot be considered "connected actions" for purposes of NEPA. The Board's rulings therefore warrant Commission review under 10 C.F.R. § 2.341(b)(4)(ii) and (iv).

1. The Board Committed Prejudicial Procedural Error When Considering Dr. Resnikoff's Affidavit

The Board committed procedural error by ordering the Staff to amend the EA based on a contention the Board had not even determined was admissible. As stated above, after the Staff submitted Mr. Easton's testimony in March 2009, the Intervenor sought to amend its contention. Along with its April 2009 amendment request, the Intervenor submitted an affidavit from Dr. Resnikoff challenging portions of Mr. Easton's testimony, including Mr. Easton's statement that there has not been any reported case involving a release of radioactive material from a Type B package.¹⁵ The Staff opposed the Intervenor's amendment request.¹⁶

In its Initial Decision, the Board declined to rule on the admissibility of the Intervenor's amended contention.¹⁷ The Board held, however, that in its amended EA the Staff must

¹⁵ Declaration of Marvin Resnikoff, Ph.D., Re: Intervenor Concerned Citizens of Honolulu's Amendment to Environmental Contention 3 Re: Transportation Accidents (April 2, 2009) at ¶¶ 5–6.

¹⁶ NRC Staff's Response in Opposition to Intervenor's Amendment to Environmental Contention 3 Re: Transportation Accidents (May 1, 2009).

¹⁷ See Decision at 52 ("[T]he Board will refrain from needlessly devoting time and effort to resolving the battle between the Staff and the Intervenor over the admissibility of [the Intervenor's] newly filed contention.").

“reconcile its expert’s findings with those of the Intervenor’s expert” on the issue of whether, in the last thirty years, there have been accidents involving a release of radioactive material from a Type B package. Decision at n.262. The Board acted arbitrarily in refraining from deciding whether the Intervenor’s transportation-related amendment is admissible but, at the same time, directing the Staff to amend the EA to respond to Dr. Resnikoff.’s claims. To the extent the Board had not even determined that the issue raised by the Intervenor presented a genuine dispute on a material issue,¹⁸ it was improper for the Board to direct the Staff to revise its EA to address the Intervenor’s claim, particularly where the Staff had opposed the Intervenor’s amendment request. This procedural error was prejudicial to the Staff and justifies Commission review under 10 C.F.R. § 2.341(b)(4)(iv).

The Board’s approach prejudiced the Staff because the Staff did not have the opportunity to respond to specific factual assertions made in Dr. Resnikoff’s affidavit. Responding to Dr. Resnikoff’s factual assertions would have required the Staff to argue the merits of the Intervenor’s amended contention. This would have been inappropriate at the point in the proceeding where the issue before the Board was limited to determining whether the Intervenor’s requested amendment was admissible.¹⁹

In fact, there is no merit to Dr. Resnikoff’s claim that there have been at least two accidents involving radiological releases from Type B packages. Had the Board admitted the Intervenor’s amended contention and provided the Staff the opportunity to argue the merits of the contention, the Staff would have explained that the accidents cited by Dr. Resnikoff did not

¹⁸ A contention must be rejected unless it provides sufficient information to show that a genuine dispute exists on a material issue of law or fact. 10 C.F.R. § 2.309(f)(1)(vi).

¹⁹ As the Board in this proceeding had previously made clear, “At the contention admissibility stage of the proceeding . . . a factual defense is generally irrelevant and inappropriate.” *Pa’ina Hawaii, LLC*, LBP-06-12, 63 NRC 403, 406 (2006).

involve Type B packages. The Staff is attaching an affidavit from Mr. Easton as a substitute for the testimony it was unable to provide.²⁰ In paragraphs 5 through 16 of his affidavit Mr. Easton rebuts Dr. Resnikoff's claim that there have been at least two reported incidents involving radiological releases from Type B packages. Mr. Easton's affidavit further demonstrates that the Board erred in directing the Staff to amend the EA without first addressing the merits of the amended contention, and his affidavit further supports the Commission taking review under 10 C.F.R. § 2.341(b)(4)(iv) and reversing the Board's decision.

2. The Board Ignored Established Law that Limits the Types of Impacts an Agency Must Consider under NEPA

NEPA does not require that an agency address every conceivable impact of a proposed action. Rather, an agency must provide only "[a] reasonably thorough discussion of the significant aspects of the probable environmental consequences[.]"²¹ An agency need not discuss impacts that are remote or highly speculative. *Warm Springs Dam Task Force v. Gribble*, 621 F.2d 1017, 1026–27 (9th Cir. 1980). See also 40 C.F.R. § 1508.8(b) (stating that the "indirect effects" of a proposed action include those effects that "are caused by the action and are later in time or farther removed in distance, but are still *reasonably foreseeable*") (emphasis added).

There is no basis under NEPA for ordering the Staff to amend the Pa'ina EA to analyze the environmental consequences of transportation accidents. It is simply not reasonably foreseeable that a source shipment to Pa'ina's irradiator will be involved in an accident with radiological consequences. Accordingly, this type of radiological release is not an "indirect

²⁰ Affidavit of Earl P. Easton dated September 11, 2009 (Attachment 1).

²¹ *Ground Zero Ctr. for Non-Violent Action v. U.S. Dep't of the Navy*, 383 F.3d 1082, 1089 (9th Cir. 2004) (citing *Trout Unlimited v. Morton*, 509 F.2d 1276, 1283 (9th Cir. 1974)).

effect” of licensing Pa’ina’s irradiator, and there is no basis for requiring the Staff to address such a release in the EA.

The record demonstrates why it is not reasonably foreseeable a source shipment to Pa’ina’s irradiator will lead to an accident with radiological consequences. Source shipments to the irradiator will be made approximately once a year along a five-mile route from the Port of Honolulu to Pa’ina’s facility. EA at 8. As Mr. Easton has explained, these shipments will be made using Type B packages, which to be certified under NRC regulations “must demonstrate [their] ability to withstand severe accident conditions, including impact, puncture and fire.” Easton Testimony at A.7.²² The likelihood a truck transporting sources to Pa’ina’s irradiator will be involved in an accident severe enough to cause significant property damage is low, while the likelihood any such accident will be severe enough to breach a Type B package is one or two orders of magnitude lower. Easton Testimony at A.7. Moreover, in thirty years of using Type B packages, there has never been a reported accident resulting in a radiological release. Easton Testimony at A.6 and A.7, Easton Affidavit (Attachment 1) at ¶¶ 5–16.

Given the low frequency of shipments, the short distance from the Port of Honolulu to Pa’ina’s facility, the protective design of Type B packages, the low incidence of accidents and the lack of any prior accident involving the release of radioactive material, it is not reasonably foreseeable that a source shipment to Pa’ina’s irradiator will result in an accident with radiological consequences. For that reason, an accident with radiological consequences is not an “indirect effect” of licensing Pa’ina’s irradiator. The Staff therefore was not required to

²² See also EA at C-11 (“Radioactive materials required for irradiators are transported in lead shielded steel casks. These casks are designed to withstand the most severe accidents, including collisions, punctures, and exposure to fire and water depths.”).

address such consequences in the EA, and it cannot properly be required to amend the EA to further consider transportation accidents.

In sum, although the Board found that Mr. Easton did not adequately consider the potential consequences of transportation accidents, the Board left unaddressed Mr. Easton's testimony that such consequences are not *probable* impacts of licensing Pa'ina's irradiator. The Board therefore failed to apply established law holding that in an EA an agency need not discuss impacts that are improbable, remote, or speculative.²³ Because the Board's ruling departs from established law, the Commission should review and reverse that ruling. 10 C.F.R. § 2.341(b)(4)(ii).

3. Contrary to the Board's Finding, NEPA Law Establishes that the Licensing of Pa'ina's Irradiator and Source Shipments to the Irradiator are Not "Connected Actions"

The Board erred in finding that "the operation of Pa'ina's irradiator and the impacts of the transportation of Co-60 are connected actions" under NEPA. Decision at 49–50. To be "connected actions," the actions must first be *federal* actions.²⁴ In the present case, neither the operation of Pa'ina's irradiator nor the yearly source shipments to the irradiator will be a federal action. Rather, these will be private actions, undertaken by Pa'ina and by certain general licensees, which are enabled by federal actions.²⁵ The underlying federal actions are the licensing of Pa'ina's irradiator, along with the licensing and registration of the carriers who ship

²³ *Trout Unlimited*, 509 F.2d at 1283; *Warm Springs*, 621 F.2d at 1026–27.

²⁴ See *Rattlesnake Coal. v. U.S. EPA*, 509 F.3d 1095, 1101 (9th Cir. 2007) (explaining that "[t]o trigger the application of NEPA, an action must be 'federal'").

²⁵ See *In the Matter of Shipments of Fuel from Long Island Power Auth.'s Shoreham Nuclear Power Station to Phila. Elec. Co.'s Limerick Generating Station* (Office of Nuclear Materials Safety and Safeguards)(Opinion of Robert M. Bernero, Director), 38 NRC 365, 375 (1993) (explaining that because there is no federal action associated with a general licensee's decision to transport fuel under a general license issued by the NRC, no NEPA requirements are triggered).

cobalt-60. As the Staff argued at length in its statements of position, these underlying federal actions are not “connected actions” as defined in CEQ regulations or Ninth Circuit precedent.²⁶

In its initial decision, the Board does not address the authority the Staff cited in support of its arguments that an individual shipment to Pa’ina will not be a federal action and that the licensing of transportation carriers is not a connected action to the licensing of Pa’ina’s irradiator. Instead, the Board analogizes to the *High Level Waste Repository* proceeding, where three Licensing Boards held that the Staff must consider the transportation of waste to Yucca Mountain because those shipments and the licensing of the repository are “closely interdependent.”²⁷ The Boards concluded not that the shipments will be “connected actions” to the licensing of the repository, however, but that the shipments will be indirect effects of licensing the repository. See *High Level Waste Repository*, slip op. at 37 (“Transportation of nuclear waste is a foreseeable consequence of constructing a nuclear waste repository.”).

The Staff does not dispute that the transportation of sources to Pa’ina’s irradiator is an indirect effect of licensing the irradiator. The Board’s error is in finding that source shipments and the irradiator’s licensing are “connected actions” under NEPA. This finding confuses an “indirect effect” as defined in 40 C.F.R. § 1508.8(b) with a “connected action” as defined in 40 C.F.R. § 1508.25(a)(1). The Commission should review the Board’s ruling pursuant to 10 C.F.R. § 2.341(b)(4)(ii) and make clear that the Staff was not required to analyze source shipments to Pa’ina’s irradiator under a “connected action” theory.

²⁶ Initial Statement at 59–61; Supplemental Statement at 32–35.

²⁷ Decision at 50 (citing *U.S. Dep’t of Energy* (High Level Waste Repository), LBP-09-06, 69 NRC ___, ___, slip op. at 38 (May 11, 2009).

As the Staff explained in its statements of position and Mr. Easton's testimony, the Staff fully considered transportation impacts generically prior to the Pa'ina EA.²⁸ Further, in the Pa'ina EA the Staff discussed source shipments to the irradiator under normal operations. EA at 8, 13, B-5, C-10, C-11.²⁹ The Commission should find that the Staff complied with NEPA by analyzing all *reasonably foreseeable* environmental impacts associated with source shipments.

B. The Board Failed to Properly Consider Evidence Relating to the Electron-Beam Alternative

The Board found that the Staff did not adequately consider electron-beam irradiation as an alternative to cobalt-60 irradiation and that the Staff must now supplement the EA to address this technology. Decision at 100–102. The Commission should review the Board's ruling because the Board did not base its ruling on the entire administrative record. This was a procedural error prejudicial to the Staff and contrary to Commission precedent holding that an EA is properly supplemented by the parties' evidentiary submittals.

As explained in its testimony, the Staff considered electron-beam irradiation by conducting its own research into this technology; considering information provided (at the Staff's request) by Pa'ina regarding its consideration of electron-beam irradiation; and taking into account public comments.³⁰ The Staff concluded that electron-beam irradiation would be a technologically feasible means of treating most of the products Pa'ina intends to process.³¹ The Staff also considered that electron-beam irradiation might reduce certain risks associated with

²⁸ Initial Statement at 57–63; Supplemental Statement at 35–36; Easton Testimony at A.8.

²⁹ What the Staff did not address at length in the EA is the potential radiological consequences from transportation *accidents*. The Staff did not do so because, as explained above and in Mr. Easton's testimony and affidavit, it is not reasonably foreseeable any such consequences will occur.

³⁰ Blevins Testimony (Prefiled Staff Exh. 1) at A.31; Blevins Supp. Testimony (Prefiled Exh. 61) at A.7.

³¹ Blevins Testimony at A.31.

cobalt-60 irradiation.³² Further, the Staff took into account that electron-beam irradiation would use more electricity than cobalt-60 irradiation.³³

The Staff mentioned electron-beam irradiation in the EA, noting that Hawaii has four phytosanitary treatment facilities, all located on the big island of Hawaii, including three heat treatment facilities and one electron-beam irradiator. EA at 6. For several reasons, however, the Staff decided not to discuss electron-beam technology in the “Alternatives” section of the EA.³⁴ First, at the time it was considering the electron-beam alternative, the Staff had already determined there would be no significant impacts from a cobalt-60 irradiator. Second, the Staff concluded there was significant uncertainty as to whether electron-beam irradiation was economically feasible. Third, the Staff concluded that electron-beam irradiation would generate somewhat higher electricity costs than cobalt-60 irradiation.

In the Initial Decision, a majority of the Board concludes that the Staff failed to carefully investigate the economic feasibility of electron-beam irradiation before deciding not to discuss this alternative in the EA. Decision at 99–100. This issue, however, is irrelevant. Regardless of whether the Staff erred by not addressing electron-beam irradiation in the EA issued August 10, 2007, the adjudicatory record includes substantial discussion of this alternative.³⁵ This

³² Blevins Supp. Testimony at A.8. Contrary to the Board’s statement in footnote 448 on page 97 of its Initial Decision, Q.8 and A.8 of Mr. Blevins’s supplemental testimony plainly show that Mr. Blevins considered whether an e-beam irradiator might eliminate some of the hazards potentially associated with using cobalt-60 sources.

³³ Blevins Supp. Testimony at A.11.

³⁴ Blevins Testimony at A.31; Blevins Supp. Testimony at A.7 and A.8.

³⁵ By contrast, NEPA requires only a “brief discussion” of alternatives where the agency is preparing an EA. See 10 C.F.R. § 51.30 (stating that an EA must include “(1) A brief discussion of . . . (ii) Alternatives as required by section 102(2)(E) of NEPA. . . .”); *N. Idaho Cmty. Action Network v. U.S. DOT*, 545 F.3d 1147, 1153 (9th Cir. 2008) (explaining that “with an EA, an agency only is required provide a brief discussion of reasonable alternatives”).

discussion includes the Staff's testimony summarized above and testimony from Mr. Kohn (on behalf of Pa'ina) and Eric Weinert (on behalf of the Intervenor). Mr. Weinert is Vice President of CW Hawaii Pride, LLC, the owner and operator of the electron-beam irradiator on the island of Hawaii. In their testimony Mr. Kohn and Mr. Weinert discuss electricity costs and other issues associated with electron-beam irradiation. As the dissenting judge correctly notes, the evidence submitted by the parties regarding electron-beam irradiation both augments and clarifies the EA's discussion of alternatives. Decision at 111.

Although the majority acknowledges that the record includes a discussion of the electron-beam alternative, the majority also finds that it would be improper to rely on this discussion in determining whether the Staff complied with NEPA. Decision at 101. The majority concludes that the parties submitted evidence on electron-beam irradiation solely to argue over whether the Staff was justified in not discussing this alternative in the EA, and that it would therefore be improper to consider this evidence for the additional purpose of determining whether the Staff's consideration of the electron-beam alternative complied with NEPA. *Id.* This reasoning is incorrect and warrants Commission review under 10 C.F.R. § 2.341(b)(4)(ii) and (iv).

The Staff did not submit evidence solely for the purpose identified by the Board. Rather, the Staff explained both how it considered the electron-beam alternative when preparing the Pa'ina EA and why it removed electron-beam irradiation from discussion in the EA's alternatives section. In any event, regardless of the purpose for which it was submitted, the evidence submitted by the Staff, Pa'ina, and the Intervenor adds to the EA's discussion of the electron-beam alternative.

The majority acknowledges that, under longstanding Commission precedent, “[t]he adjudicatory record and Board decision (and, of course, any Commission appellate decision) become, in effect, part of the [final NEPA document]”.³⁶ The majority finds this precedent does not apply in the present case, however, because the alternatives section of the Pa’ina EA does not contain any discussion of the electron-beam alternative, and thus, “the hearing record and our decision cannot modify, clarify, or augment something that does not exist.” Decision at 101.

This is an incorrect interpretation of Commission precedent. Commission precedent, including the cases cited by the majority itself, does not hold that the record of a proceeding can supplement a NEPA document only with respect to issues specifically discussed in that document. Rather, Commission precedent holds that the adjudicatory record effectively becomes part of the NRC’s final NEPA document.³⁷ The majority’s holding contravenes this precedent, as it would result in only portions of the adjudicatory record becoming part of the final Pa’ina EA.

The majority also concludes that under Ninth Circuit precedent the EA must be returned to the Staff so that it can update the alternatives discussion to include electron-beam irradiation. Decision at 101–02. There is nothing in Ninth Circuit precedent, however, suggesting that the NRC’s established procedure, under which a Staff-prepared EA is supplemented by both the evidentiary record and agency adjudicatory decisions, is inconsistent with NEPA. The issue the

³⁶ Decision at 100–101 and n.459 (citing *Pacific Gas & Elec. Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-08-26, 68 NRC 509, 526 (2008); *Hydro Res., Inc.* (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-04, 53 NRC 31, 53 (2001); *La. Energy Servs., L.P.* (Claiborne Enrichment Ctr.), CLI-98-3, 47 NRC 77, 89 (1998)).

³⁷ This precedent applies regardless of whether an EIS or EA is involved. Proceedings in which EAs have been supplemented by the adjudicatory record include *Diablo Canyon*, CLI-08-26, 68 NRC at 526; *Nuclear Fuel Services, Inc.* (Erwin, Tennessee), LBP-05-8, 61 NRC 202, 217 (2005); and *Toledo Edison Co.* (Davis-Besse Nuclear Power Station, Unit 1), LBP-87-11, 25 NRC 287, 303–322 (1987).

Ninth Circuit considers in any appeal involving NEPA issues is whether the *agency* complied with NEPA, not whether compliance was achieved through any particular component of the agency.

Because the majority erroneously departed from Commission precedent and did not properly consider the evidence pertaining to electron-beam irradiation, the Commission should grant review under 10 C.F.R. § 2.341(b)(4)(ii) and (iv).

C. The Board Failed to Apply NEPA's Rule of Reason in Finding that the Staff Must Consider Alternative Sites for Pa'ina's Irradiator

The Board found that the Staff violated NEPA by not considering alternative sites for Pa'ina's irradiator. The Commission should review the Board's finding because it is contrary to established legal precedent. 10 C.F.R. § 2.341(b)(4)(ii). Under this precedent, it was appropriate for the Staff to limit its analysis to the four alternatives it had already considered.³⁸

In its statements of position, the Staff argued that the Board should apply NEPA's "rule of reason" and find that, because the Staff had already considered four alternatives to licensing Pa'ina's irradiator, it did not need to consider additional alternatives.³⁹ The Staff additionally argued that, because it had determined that any environmental impacts at Pa'ina's proposed site would be insignificant, it did not need to consider alternative sites.⁴⁰ The Board rejected the latter argument, reasoning that even if the Staff found environmental impacts at Pa'ina's proposed location to be insignificant, that did not excuse the Staff from considering alternatives to the proposed action. Decision at 104–05. The Board did not, however, address the Staff's

³⁸ The four alternatives the Staff considered were the no-action alternative, methyl bromide fumigation, heat treatment and electron-beam irradiation.

³⁹ Initial Statement at 65–67, 70–71; Supplemental Statement at 52–54.

⁴⁰ Initial Statement at 75.

first argument that because it had already considered a number of alternatives to the proposed action, it could rely on NEPA's rule of reason to forgo considering *any* additional alternatives, including alternative sites.

NEPA's rule of reason is a "judicial device to ensure that common sense and reason are not lost in the rubric of regulation."⁴¹ Consistent with this rule of reason, "the range of alternatives that the [agency] must consider decreases as the environmental impact of the action becomes less and less substantial."⁴² NEPA's requirements are satisfied "[s]o long as 'all reasonable alternatives' have been considered and an appropriate explanation is provided as to why an alternative was eliminated" from consideration.⁴³ NEPA does not require an agency to discuss in an EA "all proposed alternatives, no matter what their merit."⁴⁴

In its amended environmental contentions, the Intervenor argued that the Staff should have considered alternative sites because doing so "would have highlighted the environmental inferiority of Pa'ina's chosen site."⁴⁵ After conducting an extensive analysis of site-specific risks, however, the CNWRA found no foreseeable radiological consequences from an aircraft crash or

⁴¹ *Dominion Nuclear N. Anna, LLC* (N. Anna ESP Site), CLI-07-27, 66 NRC 215, 229 n.71 (2007) (citing *NRDC v. Morton*, 458 F.2d 827, 834 (D.C. Cir. 1982) and *Vt. Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 551 (1978)).

⁴² *La. Crawfish Producers Ass'n v. Rowan*, 463 F.3d 352, 357 (5th Cir. 2006). See also *Highway J Citizens Group v. Mineta*, 349 F.3d 938, 960 (7th Cir. 2003) ("When, as here, an agency makes an informed decision that the environmental impact will be small . . . a 'less extensive' search [for alternatives] is required."); *River Rd. Alliance, Inc. v. U.S. Army Corps of Eng'rs*, 764 F.2d 445, 452 (7th Cir. 1985) ("The smaller the impact, the less extensive a search for alternatives can the agency reasonably be required to conduct.").

⁴³ *Native Ecosystems Council v. U.S. Forest Serv.*, 428 F.3d 1233, 1246 (9th Cir. 2005).

⁴⁴ *La. Crawfish Producers*, 463 F.3d at 357; *City of Dallas v. Hall*, 2008 U.S. Dist. LEXIS 49944 (N.D. Tex. 2008).

⁴⁵ Amended Environmental Contentions at 30.

natural phenomenon at Pa'ina's proposed site, with the possible exception of a temporary increase in the radiation level directly above the irradiator pool.⁴⁶ More specifically, the CNWRA found an offsite radiation release to be entirely speculative. It was reasonable for the Staff to take into account site-specific risks at Pa'ina's proposed site in determining how many, and what types of, alternatives it should pursue. Although the Intervenor suggests that the impacts of an aircraft crash or natural phenomenon at Pa'ina's proposed site might appear more significant when compared to the impacts at other sites, this cannot be the case where, as the CNWRA's analysis demonstrates, there will be *no* offsite impacts at the proposed site.

It was also reasonable for the Staff to take into account the categorical exclusion for irradiators in determining whether to consider additional alternatives. EA at 1, C-8. Merely because the Staff agreed to prepare an EA for Pa'ina's irradiator does not mean the Staff was bound to ignore that, in categorically excluding irradiators from NEPA review, the NRC concluded that the licensing of irradiators would "not individually or cumulatively have a significant effect on the human environment." 40 C.F.R. § 1508.4. As a result of the CNWRA's analyses, the Staff learned that applying the categorical exclusion to Pa'ina's irradiator would have been entirely proper—the allegedly "special" circumstances presented by aircraft crashes, tsunamis and hurricanes did not translate into significant environmental consequences. It would be inconsistent with NEPA's rule of reason to find that the Staff, after considering four alternatives to the proposed action, could not take into account the NRC's judgment reflected in the categorical exclusion for irradiators in deciding whether to pursue additional alternatives.

⁴⁶ The Board likewise concluded there would be no significant impacts at Pa'ina's proposed site. Decision at 109.

Further, analyzing alternative sites would have done little to resolve any conflict over the use of a resource called into question by Pa'ina's proposed action. NEPA section 102(2)(E) governs an agency's consideration of alternatives in an EA and requires that the agency "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." To the extent Pa'ina's proposal presents any such conflict, the conflict involves not whether the parcel of land on which Pa'ina intends to build its irradiator should be used for commercial purposes—Pa'ina's proposed site is, after all, in a highly trafficked industrial zone adjacent to HNL. As the Staff argued before the Board, to the extent there were any unresolved conflicts concerning alternative uses of available resources, the Staff addressed those conflicts by considering four alternatives to cobalt-60 irradiation.⁴⁷ It was reasonable for the Staff to focus its study of alternatives on those alternatives which, unlike alternative sites, would fully resolve concerns raised by the Intervenor and other members of the public regarding Pa'ina's use of radioactive material.

After determining that any environmental impacts associated with Pa'ina's proposed site would be negligible, and having already considered a number of alternatives to the proposed action, the Staff reasonably concluded there was no need to pursue additional alternatives. The Staff thereby provided an "appropriate explanation" as to why it did not consider other alternatives, including alternative sites.⁴⁸ By requiring more of the Staff, the Board departed

⁴⁷ Initial Statement at 69–70, 74–75; Supplemental Statement at 60–63.

⁴⁸ The Staff's decision to not consider alternative sites also draws support from the statement of consideration (SOC) underlying 10 C.F.R. Part 36, "Licenses and Radiation Safety Requirements for Irradiators." Although the SOC focuses on safety issues associated with the licensing of irradiators, it also emphasizes that aircraft crashes and natural phenomena are unlikely to result in the release of radiological material from an irradiator. *License and Radiation Safety Requirements for Irradiators*, 58 Fed. Reg. 7715, 7720–21, 7725–7726 (February 9, 1993) (final rule). To the extent aircraft crashes and (continued. . .)

from the rule of reason established in NEPA precedent.⁴⁹ The Commission should therefore review and reverse the Board's alternative sites ruling pursuant to 10 C.F.R. § 2.341(b)(4)(ii).

The Commission should also review the Board's alternative sites ruling because the Board appears to have concluded that an agency must always analyze alternative sites in an EA. This conclusion departs from longstanding precedent holding that in certain EAs an agency need not discuss more than the proposed action and the no-action alternative. Review is therefore warranted under 10 C.F.R. § 2.341(b)(4)(ii).⁵⁰

D. The Board Based Its Finding that the Staff Must Circulate a Draft EA Supplement for Public Comment on Erroneous Factual and Legal Conclusions

The Board held that after the Staff supplements the EA to address transportation accidents, electron-beam irradiation and alternative sites, the Staff “must allow a brief opportunity for written public comment on its draft amendment or supplement[.]” Decision at 102, 108.⁵¹ The Board found that a comment period is required both by the terms of the March 2006 joint stipulation between the Staff and Intervenor and by Ninth Circuit case law. *Id.*

(. . .continued)

natural phenomena will not lead to a release of radioactive material, the environmental impacts of these hazards will be insignificant. This strongly suggests that certain conclusions drawn by the NRC in its safety-related rulemaking—including the conclusion that irradiators can be built “at any location at which local authorities would allow other occupied buildings to be built”—apply equally with respect to environmental issues and appropriately inform the Staff's consideration of alternative sites.

⁴⁹ *La. Crawfish Producers Ass'n*, 463 F.3d at 356–57; *Highway J Citizens Group*, 349 F.3d at 960; *River Rd. Alliance*, 764 F.2d at 452.

⁵⁰ *See, e.g., Native Ecosystems*, 428 F.3d at 245–46 (considering only preferred alternative and no-action alternative acceptable); *Akiak Native Cmty. v. U.S. Postal Serv.*, 213 F.3d 1140, 1148 (9th Cir. 2000) (considering two alternatives sufficient to comply with NEPA).

⁵¹ *See also* Order (Denying Intervenor's Motion to Clarify) (September 29, 2009) at 2 (stating that the Staff must circulate its draft supplements on all three issues for public comment).

The Board's rationale for ordering a comment period does not withstand scrutiny. Under the joint stipulation, the Staff agreed to publish a draft FONSI for public comment and hold at least one public meeting in Honolulu. The Staff fulfilled its obligations under the joint stipulation by providing a public comment period on the draft EA between December 28, 2006 and February 8, 2007 and holding a public meeting on February 1, 2007, with both events occurring before the Staff published its final FONSI on August 13, 2007. The joint stipulation does not commit the Staff to holding an additional written comment period on any EA supplement. There is no basis for reading more into the stipulation than that to which the Staff and the Intervenor agreed.⁵² The Board's misreading of the stipulation is a clear error of material fact.

Ninth Circuit precedent likewise does not require that the Staff provide a public comment period on any EA supplement. The Board states that "the circumstances presented here meet the test adopted by the court in *Bering Strait Citizens for Responsible Res. Dev. v. U.S. Army Corps of Engineers*, 524 F.3d 938, 952 (9th Cir. 2008), for when an agency must allow comment on an EA." Decision at 102. In *Bering Strait* the court adopted the following rule: "An agency, when preparing an EA, must provide the public with sufficient environmental information, considered in the *totality of circumstances*, to permit members of the public to weigh in with their views and thus inform the agency decision-making process." *Id.* at 953 (emphasis added). This rule, however, does not mandate that an agency hold a written comment period on a draft EA. To the contrary, the court in *Bering Strait*, following the approach of every other circuit to address this issue, declined to hold that an agency must

⁵² The Intervenor obviously contemplated that the Staff might publish a final FONSI which, in the Intervenor's view, did not comply with NEPA and thus would have to be revised. This is reflected in the language of the joint stipulation reserving the Intervenor the right to file additional contentions challenging the adequacy of the Staff's review. Had the Staff and the Intervenor agreed that the Staff would hold an additional public comment period or meeting in Honolulu before finalizing any EA supplement, this understanding would likewise have been reflected in the joint stipulation.

always circulate a draft EA for public comment. *Id.* at 952. The court instead made clear that it would be up to individual agencies to determine how to provide sufficient information to the public. In *Bering Strait* itself, for example, the agency did not circulate a draft EA for public comment, but instead took other steps to provide information about the agency action, such as holding public meetings. The court found the agency's approach sufficient to comply with NEPA.

In the present case, the Staff should decide in the first instance how it will apprise the public of any new information to be included in any EA supplement. The Board's finding that the joint stipulation requires the Staff to provide a written comment period is a clearly erroneous finding of material fact, while its alternative finding is a departure from Ninth Circuit precedent. The Commission should grant review under 10 C.F.R. § 2.341(b)(4)(i) and (ii).

IV. Conclusion

The Commission should review and reverse the Board's rulings that in preparing the final EA the Staff failed to comply with NEPA when considering transportation accidents and electron-beam irradiation and by not considering alternative sites. The Commission should also clarify that, in the event the Staff must supplement the EA, it is within the discretion of the Staff, not the Board, to determine in the first instance how the public should be apprised of any new environmental information.

Respectfully submitted,

/RA/

Michael J. Clark
Molly L. Barkman
Counsel for NRC Staff

Dated at Rockville, Maryland
this 14th day of October, 2009

September 11, 2009

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of)	
)	
PA'INA HAWAII, LLC)	Docket No. 30-36974-ML
)	
Materials License Application)	ASLBP No. 06-843-01-ML

AFFIDAVIT OF EARL P. EASTON

I, Earl P. Easton, hereby state as follows:

1. I am employed by the U.S. Nuclear Regulatory Commission as a Senior Level Scientist specializing in the transportation of radioactive materials. I have previously provided written testimony in this proceeding. That testimony can be found in Prefiled Staff Exhibit 70, which was submitted on March 5, 2009. My job responsibilities, education, and work experience are listed in my statement of qualifications attached as Prefiled Staff Exhibit 71, which was also submitted on March 5, 2009.

2. I have reviewed "Intervenor Concerned Citizen's of Honolulu's Amendment to Environmental Contention 3 Re: Transportation Accidents," dated April 6, 2009. I have also reviewed the affidavit of Marvin Resnikoff, Ph.D., dated April 2, 2009, that was attached to the Intervenor's pleading, as well as the documents listed as Attachments A and B to the Intervenor's pleading.

3. Dr. Resnikoff objects to my statement, made at A.7 of my testimony, that "during the past 30 years, there has never been a reported case of a release of radioactive material from a Type B package during either routine transportation or for shipments involved in an accident." Amendment Request at 12 (citing Easton Testimony at A.7). Dr. Resnikoff claims that this statement is factually incorrect. Resnikoff Affidavit (April 2, 2009) at 5. Dr. Resnikoff

states, “Based on my research, I am aware of at least two transportation accidents involving Type B packages that have resulted in releases of radioactive materials since 1979.” *Id.*

4. In support of his claim, Dr. Resnikoff cites two incidents: a 1984 incident involving a shipment of spent fuel, and a 1988 incident involving a radiographic camera. *Id.* at 5–6. Dr. Resnikoff refers to Attachments A and B to the Intervenor’s Amendment Request, which provide further information regarding the 1984 and 1988 incidents. *Id.*

5. The first example cited by Dr. Resnikoff refers to an alleged 1984 shipment of spent fuel referenced in a 2006 report by the Committee on Transportation of Radioactive Waste of the National Research Council, entitled “Going the Distance?: The Safe Transport of Spent Nuclear Fuel and High-Level Radioactive Waste in the United States.” Dr. Resnikoff’s claim is apparently based on footnote “e” of Table 3.3 and the accompanying text on page 121 of that report. The accompanying text on page 121 explaining footnote “e” states “these older incidents *apparently* involved packages that were designed to transport spent fuel in water for cooling and shielding, and the leaks *presumably* involved the release of small amounts of this water through holes in pipes, valves, and seals.” (Emphasis added.)

6. As the NRC point of contact for the study, I have first-hand knowledge of the source material on which Table 3.3 is based. Table 3.3 is based on a fact sheet provided to the Committee on Transportation of Radioactive Waste by the Department of Energy (DOE) entitled “Reported Incidents Involving Spent Nuclear Material Shipments 1949 to Present,” dated May 6, 1996. An excerpt (the first two pages) from a true and correct copy of that factsheet is attached hereto as Exhibit A.

7. As listed in the DOE factsheet, the incident occurred on January 27, 1984 and “involved a slow drip from the bottom front end of an empty cask¹ while stored in [a] transportation terminal.” Based on this description alone, there are several reasons why the

¹ Cask is a term of art that is often used interchangeably with either the term “Type B package” or “Type B packaging.” It is not defined in either NRC or Department of Transportation regulations.

incident would **not** constitute a release of radioactive material from a Type B package during either routine transportation or for a shipment involved in an accident.

8. First, at the time of the incident the cask was not involved in transportation.

9. Second, at the time of the incident the cask was empty. Even if it were in transportation, as an empty cask, it would be classified and shipped as an empty packaging under DOT regulations (49 CFR 173.428) and would not be considered a "Type B" package. The design and use of Type B packages are strictly controlled by requiring that they be fabricated, prepared for shipment, and transported in accordance with a Certificate of Compliance or other approval issued by the NRC, DOT or DOE.

10. Third, it is not clear from the DOE factsheet whether or not the liquid dripping from the bottom front end of the empty cask was contaminated, or even if it originated from within or on the outside of the cask (e.g., from condensation). I would note that the Committee on Transportation of Radioactive Waste's study, on which Dr. Resnikoff bases his claim, states only that "the leaks *presumably* involved the release of small amounts of this water through holes in pipes, valves, and seals." (Emphasis added.)

11. For these reasons, the alleged 1984 shipment of spent fuel the incident would *not* constitute a release of radioactive material from a Type B package during either routine transportation or for a shipment involved in an accident.

12. The second example cited by Dr. Resnikoff refers to an incident that occurred in Houston, Texas on January 25, 1988. This incident involved the loss of an iridium-192 radiographic source from a Model SPEC-2T radiographic camera. I was personally involved in monitoring this incident for the NRC, and I was a co-author of NRC Information Notices No.88-06 and No.90-24, which are cited in Exhibit B to the Intervenor's Amendment Request, and upon which Dr. Resnikoff relies in his affidavit.

13. Although the iridium-192 source was in fact released from the radiographic camera during transportation, from my recollection the NRC determined after a detailed

review—a review in which the NRC, DOT and the State of Texas all participated—that this incident did not represent a failure of a Type B package in transportation. The primary reason for this determination was that the Model SPEC-2T camera involved was not configured as a Type B package for transportation as required in its Certificate of Compliance (The Certificate of Compliance is reproduced in Dr. Resnikoff's Exhibit B.)

14. In particular, the review found that there was a very high likelihood that the source was not secured in a shielded position by either the locking device or protective cap. Either of these failures would have been in violation of Condition 6 of the Certificate. This finding was based on the fact that neither the locking mechanism nor protective cap was found near the scene of the accident, as well as the fact that the package's condition was not consistent with the locking mechanism or protective cap being in place at the time of the incident. The protective cap, locking assembly and safety plugs are keys components in assuring that the source remains in place during transportation.

15. If the review of the incident had concluded that the Model SPEC-2T involved in the incident had been properly prepared as a Type B package in accordance with its Certificate, the NRC would have classified this incident as a release of radioactive material from a Type B package during transportation.

16. To summarize, neither incident cited by Dr. Resnikoff is inconsistent with my testimony that, "during the past 30 years, there has never been a reported case of a release of radioactive material from a Type B package during either routine transportation or for shipments involved in an accident."

17. I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information, and belief.

This affidavit was executed this 11th day of September, 2009, at Rockville, Maryland.

/Original Signed By/

Earl P. Easton



Reported Incidents Involving Spent Nuclear Fuel Shipments 1949 to Present

May 6, 1996

There have been 72 reported incidents involving spent nuclear fuel shipments from 1949 to present.

From 1949 to 1970 14 incidents were reported in a series of U.S. Atomic Energy Commission reports. They were either traffic accidents with no releases or nontraffic accident events with minor leaks suspected from the casks which resulted in small amounts of observed contamination.

From 1971 to present, 58 incidents have been reported in the Radioactive Material Incident Report database operated by Sandia National Laboratories. 49 of the 58 incidents involve minor surface contamination.

The 72 incidents can be characterized as follows:

- 4 incidents of accidental radioactive material contamination beyond the vehicle
- 4 incidents of accidental radioactive material contamination confined to the vehicle
- 13 incidents of traffic accidents, resulting in no release or contamination
- 49 incidents of accidental surface contamination
- 2 other incidents were mentioned in papers but descriptions are not available.

Eight incidents of radioactive material contamination (between 1960-1984) involved leaks of water, liquid, or (reported as) coolant/moderator from casks which were discovered during shipping. Description of the events and equipment are insufficient to evaluate the failure mechanisms or sources of contamination. However, the abbreviated information provided seems to indicate contributing factors may include the absence of regulations for design and use of transport casks, inadequate procedures, or not following the procedures. Some of the earlier incidents occurred prior to the establishment of formal transportation regulations (1966). (See attached incident reports.)

Attached is a table describing each of the 72 incidents in more detail.

**Reported Incidents Involving Spent Nuclear Fuel Shipments
1949 to Present (72 incidents by type)**

Date	Mode	Incident Description
Radioactive material contamination beyond the vehicle (4 of 72 incidents):		
6/2/60	Rail	Leak from cask, small areas at three rail yards contaminated, no runoff or aerial dispersion.
8/21/62	Truck	Cask leakage, trailer and small portion of road contaminated.
11/11/64	Truck	Cask leakage-, trailer, packages, and terminal contaminated.
1/27/84	Truck	Slow drip from bottom front end of empty cask while stored in transportation terminal
Radioactive material contamination confined to vehicle (4 of 72 incidents):		
11/20/60	Truck	Small leak from cask onto trailer floor, result, of shifting cask, contamination confined to vehicle.
9/22/61	Truck	Leak from cask onto trailer floor, result of shifting, contamination confined to vehicle.
12/10/63	Rail	Cask leakage, cask contaminated, contamination confined to trailer.
7/4/76	Truck	Pinhole leak of, reported as, coolant/moderator on outside jacket of cask. Shipment continued without risk to public.
Transportation accident, no release or contamination (13 of 72 incidents):		
12/1/56	Truck	Slid off icy road and overturned, 2 casks, 1 fell off trailer, no damage, no release.
1/29/57	Rail	Uncoupling, damage from debris, no release.
4/15/60	Truck	Trailer unhitched from tractor at 5 mph,

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of)	
)	
PA'INA HAWAII, LLC)	Docket No. 30-36974-ML
)	
Materials License Application)	ASLBP No. 06-843-01-ML

CERTIFICATE OF SERVICE

I hereby certify that copies of the "NRC Staff's Petition for Review of Board's Initial Decision" was served on the recipients listed below by deposit in the United States mail and through deposit in the Nuclear Regulatory Commission's internal system as indicated by an asterisk (*) and by electronic mail as indicated by a double asterisk (**) on this day, October 14, 2009.

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