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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

BEFORE THE SECRETARY

In the Matter of)	
Pa'ina Hawaii, LLC)	Docket No. 030-36974
)	
Materials License Application)	ASLBP No. 06-843-01-ML
)	

APPLICANT PA'INA HAWAII, LLC'S ANSWER TO INTERVENOR
CONCERNED CITIZENS OF HONOLULU'S CONTENTIONS RE:
DRAFT ENVIRONMENTAL ASSESSMENT AND DRAFT TOPICAL REPORT

DECLARATION OF RUSSELL N. STEIN

CERTIFICATE OF SERVICE

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SECY 02

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I. INTRODUCTION.

On February 9, 2007 Petitioners-Intervenors CONCERNED CITIZENS OF HONOLULU ("Intervenors") filed a set of allegedly "new contentions" challenging the Nuclear Regulatory Commission's "Draft Environmental Assessment" (ADAMS Accession No. ML063470231) ("EA"), and also challenging the NRC's "Draft Topical Report on the Effects of Potential Natural Phenomena and Aviation Accidents at the Pa'ina Hawaii, LLC Irradiator Facility" (ADAMS Accession No. ML063560344). ("Topical Report")

Both the EA and the Topical Report were prepared by the NRC in relation to the application of PA'INA HAWAII, LLC ("Applicant") to build a Category III irradiator in Honolulu, Hawaii. Intervenor's new Contentions challenge both the EA and the Topical Report, on the grounds that those documents are "inadequate."

The Nuclear Regulatory Commission ("NRC") has established requirements that must be met if a new contention is to be deemed "admissible." 10 C.F.R. Sec.

2.309(f)(1)(i), (ii), (v), and (vi). The Petitioner-Intervenor must do all of the following:

- (1) provide a specific statement of the legal or factual issue to be raised;
- (2) briefly explain the basis of its issue;
- (3) provide a concise statement of the alleged facts or expert opinions, including references to specific sources and documents, that support the Petitioner's position and upon which the Petitioner intends to rely at the hearing; and
- (4) sufficient information demonstrating that a genuine dispute exists in regard to a material issue of fact or law, including references to specific portions of the Application that the Petitioner disputes, or in the case when the Application is alleged to be deficient, the identification of such deficiencies and supporting reasons for this belief.

Furthermore, the Petitioner must show that:

- (5) the issue(s) raised by them is (are) within the scope of the proceedings, and
- (6) material to the findings the NRC must make to support the action involved in the proceeding. 10 C.F.R. Sec. 2.309(f)(1)(iii)-(iv).

If a Petitioner's contention fails to comply with any of the above six requirements, the contention is inadmissible and will be dismissed. See Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 325 (1999).

Furthermore, by its "Order" dated January 25, 2007, this Licensing Board mandated that any further "new contentions" made by Petitioner's would also have to meet the requirements of 10 C.F.R. Sec. 2.309(f)(2) by showing that: (i) the information upon which the amended or new

contention is based was not previously available; (ii) the information upon which the amended or new contention is based is materially different than information previously available; and (iii) the amended or new contention has been submitted in a timely fashion based on the availability of the subsequent information.

This Board will review the Petitioner-Intervenor's new contentions under "stringent pleading requirements," and the new contentions must meet the following high standard: "[A]n Intervenor must articulate specific contentions with adequate bases." U.S. Army (Jefferson Proving Ground Site), CLI-05-23, 62 N.R.C. 546, 549 (2005)

In the instant case, Intervenor's February 9, 2007 filing fails to meet the above standard and requirements, and therefore the entire filing should be dismissed.

II. COLLECTIVELY, INTERVENOR'S NEW ENVIRONMENTAL CONTENTIONS #3, #4, AND #5 OUGHT TO BE DISMISSED (Responding to Intervenor's Part IV)

Collectively, Intervenor's alleged "new" Environmental Contentions #3, #4 and #5 fail to meet the standards and requirements set forth in Part I above, and all three "new" contentions ought to be denied/dismissed.

First, a general observation: the purpose of the EA process is to ascertain and study a proposed project's impacts on the environment. The process requires the federal agency (here, the NRC) to inquire into and study all reasonable environmental impacts, to obtain all reasonable public input, and to thereafter briefly and concisely summarize its findings.

But, it is important to remember that the EA process is a "two-way street" designed to raise, analyze and discuss discrete and meaningful issues in a timely manner. Parties who participate in, or who criticize or challenge an EA, or seek a full environmental impact statement ("EIS"), must identify specific factual and legal issues related to the environmental impacts; if those parties fail to be specific, then their participation in, and challenges to an EA, will be denied and/or dismissed. See Morongo Band of Mission Indians v. FAA, 161 F.3rd 569, 576 (9th Cir. 1998); Save Our Cumberland Mountains v. Kempthorne, 453 F.3rd 334, 347 (6th Cir. 2006)

The U.S. Supreme Court has summarized the two-way EA process as follows: parties that challenge an agency's compliance with NEPA must "structure their participation so that it alerts the agency to the parties' position and contentions, in order to allow the agency to give the issue

'meaningful consideration.'" DOT v. Public Citizen, 541 U.S. 752, 764 (2004).

Especially in light of the "two-way" dialogue which is supposed to underlie the EA process, each of Intervenor's new Environmental Contentions #3, #4 and #5 ought to be dismissed on the following grounds:

A. All Three Of Intervenor's New Environmental Contentions Were Filed Too Late.

Intervenor's contentions are invalid as a matter of law because they were filed too late, which is to say, the new contentions violate the three requirements of 10 C.F.R. Sec. 2.309(f)(2): (i) The information upon which the amended or new contention is based was not previously available; (ii) the information upon which the amended or new contention is based is materially different than information previously available; and (iii) the amended or new contention has been submitted in a timely fashion based on the availability of the subsequent information.

In this case, the geographical situs of Pa'ina's irradiator was known upon the initial Application filed in 2005. The proposed location has not changed. Yet, virtually all of the "facts" and "opinions" set forth in Intervenor's four experts' declarations are based upon information and

data which has been available for many months, if not for many years.

Assuming that the Intervenor's new contentions had been timely transmitted to the NRC as part of the "two way" dialogue process, the NRC could have considered the information in its preparation of the instant EA and Topical Report.

For example, the Geotechnical Report upon which Expert Pararas-Carayannis relies for his critique (Pararas-Carayannis Declaration, para. 19) was dated September 14, 2005, and given ADAMS accession no. ML053460276 (dated November 30, 2005). Intervenor said nothing about, did nothing about, and failed to analyze that Geotechnical Report in regards to the irradiator for the past 18 months. If their concern was soil quality and stability of the proposed irradiator site, Intervenor should have raised their contentions based upon the Geotechnical Report by no later than early 2006.

Likewise, Pararas-Carayannis admits that he developed (or helped develop, it is unclear) the tsunami evacuation zones used by Hawaii Civil Defense as far back as 1967 (Exhibit 9, p. 15) Tsunami evacuation zone Maps 18 and 19 cited by Pararas-Carayannis have been prominently published in the front of Honolulu's telephone books for at least 20 years.

The information was clearly available to Intervenors in October 2005, but they failed to articulate and specify any concerns about the Maps and the run up waves and velocities to the NRC until February 9, 2007.

Similarly, Dr. Resnikoff apparently utilizes a 1996 Department of Energy ("DOE") formula for his airplane crash analysis. (Exhibit 1, at p. 3) Dr. Resnikoff admittedly used historical data on the number of flights using Honolulu International Airport were compiled over the past 30 years.¹ This information was freely available to Intervenors and Dr. Resnikoff, but they failed to offer any new or amended contentions until February 9, 2007, or after the NRC had prepared its EA and Draft Topical Report. Not only was the data and information available to Intervenors for years, but their all-too-late filing contradicts the hoped-for, timely "two way" flow of information which underlies the EA process.

What is more, Dr. Resnikoff claims to have previously "employed" the NUREG-0800 methodology in a Utah matter. (Resnikoff Dec., para. 9) Therefore, he was familiar with the NRC's methodology. Dr. Resnikoff also had available to him the FAA historical data by early 2006. Intervenors failed to amend their original "Contention #7" asserted in their October 3, 2005 Petition, and they failed to file any

¹Intervenor's Exhibit 1, p. 5, Table 1.

new contention until February 9, 2007. Instead of utilizing "gotcha"-type litigation tactics during this process² (which from Pa'ina's point of view are dilatory), Intervenor's newest airplane-crash contention should have been made, amended or updated long before the NRC Staff undertook to produce the EA and Topical Report.

Indeed, almost the entire EA and NRC Topical Report which are challenged by the Intervenors consist of basic data, mathematical formulas and scientific methodologies which had been available to the public for many months or years. As stated by the authors of the Topical Report: "No CNWRA-generated original data are contained in this report. Data used in this report are from other publicly available sources." (Emphasis added) (Topical Report, p. vi)

Thus, virtually all of the basic data and formulas upon which Intervenors base their February 9th new Environmental Contentions #3, #4 and #5 was clearly and indubitably available to Intervenors and their experts for months, or even years prior to February 9, 2007. However, Intervenor's new Contentions #3, #4 and #5 were belatedly filed on February 9, 2007. Due to their obvious untimeliness, all

² The Ninth Circuit Court of Appeals has uniformly condemned "gotcha" tactics during or surrounding litigation. See, e.g., Jones v. Smith, 231 F. 3d 1227, 1239 (9th Cir. 2000); Gibson v. Chrysler Corp., 261 F. 3d 927, 940 (9th Cir. 2001)

three new Contentions ought to be dismissed as a matter of law.

B. Intervenor's Three New Environmental Contentions Ignore, And Otherwise Seek To Alter, The Standard Of Review Or Burden Of Persuasion.

Where a federal agency issues a "Finding Of No Significant Impact" ("FONSI"), and where the federal agency decides not to prepare an Environmental Impact Statement ("EIS"), challengers carry the burden of proving that the agency's decisions were "arbitrary and capricious, or an abuse of discretion." 5 U.S.C.S. Sec. 706(2)(A); DOT v. Public Citizen, 541 U.S. 752 (2004); Environmental Protection Information Center v. United States Forest Service, 451 F.3d 1005 (9th Cir. 2006); Native Ecosystems Council v. USFS, 428 F.3d 1233 (9th Cir. 2005) This legal standard grants broader and greater deference to the agency's expertise. Greenpeace Action v. Franklin, 982 F.2d 1342, 1350 (9th Cir. 1992)

However, Interveners in their February 9, 2007 Supplemental Contentions adopt two (2) tactics regarding the proper standard of review of the NRC's determinations: (1) Interveners ignore, never acknowledge and never even mention the terms "arbitrary," "capricious" or "abuse of discretion"; and (2) Interveners attempt to place the

burden of proof or persuasion on Pa'ina Hawaii, LLC or the NRC.³

Indeed, an uninitiated person reading Intervenors' February 9th filing would not be able to discern the proper legal standard of review. The words "arbitrary and capricious" are nowhere to be found in Intervenor's 26-page document.

Consequently, because Intervenors fail to identify the fundamental legal standard by which the EA is to be reviewed, Intervenors' entire February 9th filing ought to be dismissed because Intervenors necessarily cannot "provide a specific statement of the issue of law . . . raised" 10 C.F.R. Sec. 2.309(f)(i).

C. Intervenor's Three New Environmental Contentions Are Not Based Upon The Whole Record, But Rather They "Cherry Pick" And Highlight Isolated Bits Of Information.

The almost natural result of Intervenor's failure to identify the proper standard of review and the burden of persuasion as set forth in "B" above, is that Intervenor's apparently feel free to ignore full record herein.

Intervenors in their February 9th filing repeatedly and improperly "cherry pick" their evidence. Intervenors select

³ Intervenors declare: "As discussed herein, the Draft Topical Report contains numerous deficiencies that preclude Pa'ina from relying on it to carry its burden of demonstrating its proposed irradiator would 'protect health and minimize danger to life of property,' as required by 10 C.F.R. Sec. 30.33(a)(2)." Supp.

only isolated examples of evidence that support their EA or FONSI criticisms, but they ignore the context of that evidence, or the overwhelming contrary evidence. In NEPA cases, the 9th Circuit Court of Appeals has repeatedly criticized parties who seek to "cherry pick" facts from an administrative record, and the 9th Circuit has consistently ruled against those parties as a matter of law. Native Ecosystems Council Native Ecosystems Council v. United States Forest Service, 428 F.2d 1233, 1240 (9th Cir. 2005); Environmental Protection Information Center v. United States Forest Service, 451 F.3d 1005, 1011 (9th Cir. 2006) In the case at bar, Intervenor's February 9th filing is characterized by an unusual amount of "cherry picking."⁴

Intervenor's Environmental Contentions #3, #4 and #5 "pick and choose" single, isolated facts which they deem are favorable to them. However, those few isolated facts are taken entirely out of context, or are flatly contradicted by other evidence in the Record. Consequently, their

⁴Thus, for example, Pararas-Carayannis proclaims that a tsunami "historic run-up record" of 31 feet struck the Island of Oahu in 1946; however, he fails to note that in the immediate area of the proposed irradiator, the same "historic" 1949 run-up was but a negligible 2 feet. (Exhibit 9, p. 14, color-coded map) Furthermore, Pararas-Carayannis fails to mention that this negligible 1949 run-up in Keehi Lagoon occurred before the construction of the massive Reef Runway in the mid-1970's, which formed a substantial isthmus around and further shields the irradiator's proposed site. "Cherry picking" also includes Intervenor's deliberate ignoring of context and other strong contrary evidence. Thus, the very Tsunami Evacuation Map which Pararas-Carayannis claims to have helped develop (Declaration, para. 3) and upon which he bases his opinions, clearly states: "Note: Maximum rise of water levels within Keehi Lagoon . . . should not exceed 4 feet." (Exhibit 9, p. 16, Map 19) This printed statement has been relied upon by the public for decades. It flatly contradicts the dire innuendoes contained in Paras. 23-31 of the Pararas-Carayannis Declaration.

Environmental Contentions #3, #4 and #5--which are based upon bits and pieces of the facts in the record--should be dismissed as a matter of law.

D. Intervenor's Three New Environmental Contentions Fail To State Or Demonstrate Any "Nexus" Or "Pathway" Between The Claimed Disasters, And The Dispersion Of Radioactive Sources.

Collectively, Intervenor's new Environmental Contentions #3, #4 and #5 should also be dismissed because Intervenor is unable to state or support with evidence any "nexus" or "pathway" between their selectively-chosen evidence, and their ultimate conclusions of radioactive dispersal. This missing "nexus" or "pathway" ought to result in the dismissal of all three of Intervenor's new Contentions #3, #4 and #5.

As noted in the Affidavit of Russell N. Stein attached hereto, the Intervenor's Experts' statements and opinions fail to specify contentions against the EA, and also fail to create material disputes of fact. This failure to assert valid contentions arises because those Experts' statements not only reflect an ignorance of or misunderstanding of the facts, but also because those Experts' statements reach conclusions without any discernible "pathway" to those conclusions, i.e., the release of radioactive material that might affect the environment.

For example, Intervenors argue that a 42-inch "lip" of the irradiator pool would, should a plane crash through the building housing the irradiator, breach the below-ground portion of the pool. However, the 42-inch "lip" is intentionally designed to be sacrificed, or sheared off, with no structural impact to the below ground portion of the pool. There would be no significant forces transmitted to the radioactive sources. (Stein, para. 10(A)) Furthermore, the radioactive sources would remain in the pool via a series of designed disconnections. (Id.) Intervenors fail to challenge the actual safety design built into the irradiator's pool.

A further example: Intervenors argue that earthquake-induced "liquefaction" of the underlying strata would lead somehow to "buoyancy" of the irradiator pool, which leads thereafter, somehow, to the dispersion of radioactive materials. However, Intervenors' expert failed to take into account the deliberate design of the irradiator pool's "anchors," i.e. three support beams in the bottom of the pool, and I-beam bands (both of which are embedded into concrete), which counteract negative buoyancy. Thus, there is no scientific or mathematical "pathway" between the Experts' allegations, and the Experts' ultimate conclusion of radioactive dispersion. Again, Intervenors fail to

specifically challenge, or create material disputes regarding, the safety design built into the irradiator's pool anchors.

Similarly, the NRC discussed and summarized its "stylized fluid dynamic" studies in the EA (pp. 9-10), which studies and methodologies were detailed in the Topical Reports. (pp. 3-3 to 3-10) The NRC concluded that it would require a wave traveling 118 meters per second (or 265 miles per hour) to drag the sources out of the irradiator pool via a vortex. The NRC then calculated that a massive tsunami wave (32.8 feet high) would be traveling only 13 meters per second. The NRC concluded, based upon its mathematical calculations, that the sources would not be pulled out by a tsunami-created vortex.

By contrast, Intervenor's Contentions present no mathematical analysis, no contrary stylized fluid dynamics studies, and no mathematical conclusions. The NRC's findings stand unchallenged. Therefore, Intervenor fails to specify any valid claims, and Intervenor also fails to materially dispute the NRC's facts and conclusions.

To summarize: Intervenor's "new" Environmental Contentions #3, #4 and #5 should all be denied/dismissed

because: (1) Intervenors' Contentions are filed much too late, because the "new" Contentions are based upon information which has been available for many months, or even years; (2) Intervenors fail to "specify" any appropriate legal standard of review for the EA and the Topical Report, and consequently, Intervenors cannot state any valid contention of law; (3) Intervenors cite only isolated bits of information from the record, none of which bits of information state valid contentions or create material factual disputes; and (4) Intervenor's Experts fail to create factual "pathways" (from their selectively-chosen, isolated bits of information) to their ultimate conclusions of radioactive material dispersion.

III. TAKEN INDIVIDUALLY, INTERVENOR'S NEW ENVIRONMENTAL CONTENTIONS #3, #4 AND #5 SHOULD EACH BE DENIED/DISMISSED AS A MATTER OF LAW. (FURTHER RESPONSE TO INTERVENOR'S PART IV)

This Part III will demonstrate that each of Intervenor's new Environmental Contentions, taken alone, ought to be dismissed as a matter of law.

A. Environmental Contention #3 Ought To Be Denied/Dismissed As A Matter Of Law, Because The Draft EA Provides Sufficient Evidence, Analysis, And Conclusions As A Matter Of Law, And Goes Beyond NEPA's Requirements For An EA On A Small Project.

1. The EA Provided Facts, Statistical Data, Formulas, Calculations And Conclusions Based Upon The Science And Math, And Therefore Contention #3 Ought To Be Dismissed.

(a) Intervenors complain generally that the draft EA prepared by the NRC's experts contains "insufficient evidence" and "insufficient analysis," and that the NRC failed to take a "hard look" at potential environmental impacts. (Supp. Contentions, pp. 16-18)

This sub-contention is unfounded, and therefore this sub-contention ought to be denied/dismissed as a matter of law.

First, Intervenors claim that an EA must contain within itself all "data and analysis that purportedly support the Draft EA's conclusions," citing Idaho Sporting Congress v. Thomas, 137 F.3d 1146, 1150 (9th Cir. 1998). However, the Idaho Sporting Congress decision does not require the EA to contain within itself all data and analysis. Instead, the 9th Circuit Court in Idaho Sporting Congress required EA's to at least make explicit references in footnotes to the methodologies and scientific sources utilized.⁵ In the case at bar, the NRC went beyond mere "footnotes" by making explicit reference to all

⁵ The 9th Circuit Court of Appeals cited 40 C.F.R. Sec. 1502.24, which required methodologies and scientific sources to be referenced in footnotes, as the minimum method of referencing in an EA.

methodologies and scientific sources within the text of the EA.

Consequently, Intervenor's sub-contention (that an EA cannot make explicit references to outside methodologies and scientific sources) has no case law support, and is actually contradicted by the regulations. The sub-contention fails to state a specific contention and ought to be denied/dismissed as a matter of law.

Furthermore, Intervenor's also fail to establish any genuine, material dispute of fact in violation of 10 C.F.R. Sec. 2.309(f)(vi).

(b) Intervenor's further sub-contend that the public is entitled to receive the "hard data" to support the experts' opinions set forth in an EA.

However, the draft Topical Reports, which are expressly referred to within the text of the EA, do provide substantial "hard data," formulas and calculations supporting each pertinent expert opinion. Furthermore, the NRC properly indexed its "Sources Used" at the conclusion of the EA. Thus, the EA provided substantial, detailed factual data and analysis.

Intervenor's fail to state a contention or create a material dispute of fact or law. Their sub-contention re "hard data" ought to be dismissed.

(c) Finally, Intervenors posit thirteen (13) general "bullets" (at pp. 16-17) which they sub-contend are not adequately addressed in the EA. However, because those "bullets" are not actually supported by the Experts' Declarations or Exhibits, it is difficult to discern whether the "bullets" are intended to state claims, or whether they just represent an outline of possible talking points which were later abandoned.

However, and in any event, those 13 bullets neither state a contention of law or fact at this stage of the EA process, nor do the bullets raise material disputes of fact or law. Specifically:

Bullet No. 1 (Standards) is actually an implicit challenge to occupational health regulatory standards, and in any event, it is a post-construction compliance issue which is beyond the scope of this proceeding.

Bullets 2-5 are post-construction "compliance" issues, not germane here. Furthermore, and in any event, the underlying facts were contained in the initial Application, making this challenge too late.

Bullet No. 6, insofar as it appears to challenge the impacts during shipment, is a materials transportation issue, which is not a part of this licensing process. Indeed, this contention was previously dismissed as Safety

Contention #8 in the Board's March 24, 2006 Memorandum and Order.

Intervenors present no evidence contradicting or challenging Bullet No. 7 (socioeconomic impact), which "small impact" conclusion is clearly supported by various statements throughout the EA and Topical Report. Intervenors present no evidence contradicting the finding of small socioeconomic benefits; indeed, none of Intervenor's Experts reports even mentions the phrase "socioeconomic effects."

Bullet No. 8 ("Crash Frequencies") fails to legally challenge the NRC's rather painstaking and formulaic detail contained within pp. 2-5 to 2-11 of the Draft Topical Report. Furthermore, and in any event, Intervenor's Bullet No. 8 appears to be an implicit but improper challenge to NUREG-0800 (NRC, 1981) upon which the NRC based its study.

Bullets No. 9, 10 and 11 (Source Assembly) fail to challenge in mathematical terms any of the NRC's analysis and conclusions at p. 1-1 to 1-2 and also pp. 2-12 to 2-13. The NRC goes on to note that the Source Assembly complies with the specifications contained in 10 C.F.R. 36.21. Finally, and in any event, the irradiator's design was available with the Application since summer 2005.

Consequently, Intervenors fail to state a valid claim or create material disputes of fact; Intervenors are actually and improperly challenging 10 C.F.R Section 36.21; and Bullets 9, 10 and 11 are raised too late to be admissible.

Bullets No. 12 and 13 (fluid dynamic calculations) fail to challenge the NRC's analysis at pp. 3-4 to 3-5 of the Natural Phenomena Topical Report, as well as pp. 9-10 of the EA. The key calculations and conclusions (that the vortex caused by a tsunami or hurricane run-up cannot lift the source materials out of the pool) are unrebutted by any calculations or mathematical conclusions on the part of Intervenors.

To summarize: the sub-contentions (including the 13 bullets) raised by Intervenors ought to be denied/dismissed because they fail to state specific contentions of law or fact, and furthermore, because Intervenors fail to create any material disputes of fact.

2. The NRC's Draft EA Fully And Concisely Discussed All Reasonable Impacts From Natural Disasters And Aviation Accidents; Furthermore, The Transportation Of Cobalt Sources Has Previously Been Dismissed In This Action And Is Barred By Res Judicata.

At the outset, it should be noted that Intervenors previously raised (as their original Contention #8) the transportation of radioactive materials to and from Hawaii.

That Contention #8 was dismissed by means of the NRC's March 24, 2006 Memorandum and Order on the grounds that it was outside the scope of this licensing proceeding. It ought to be dismissed again because it is outside the scope of these proceedings, and for the further reason of res judicata.

This narrows Intervenor's new Contention #3 down to impacts from natural disasters and aviation accidents.

The 9th Circuit Court of Appeals has held that the question in reviewing whether a project will have adverse effects on the environment, and whether a EA is sufficient or whether an EIS is required, is a matter of "degree." Environmental Protection Information Center v. Klamath Forest Alliance, 451 F. 3d 1005, 1017 (2006) There, the 9th Circuit rejected the challengers' attempt to "capitalize on the Forest Service's thorough and candid environmental analysis by seizing on various bits of information and data . . . to claim that substantial questions exist as to whether the [Project] may have a significant effect on the environment." *Id.*, at 1017.⁶

The 9th Circuit in reviewing impacts of a project will also defer to the agency's scientific expertise in a NEPA

⁶ The 9th Circuit in Environmental Protection Information Center also approved the use in an EA of terms such as "negligible" and "immeasurable" where those terms were used in "proper context." 451 F. 3d at 1013.

process. Where an agency's scientific methodology is challenged on the grounds that there exists a different scientific methodology, the 9th Circuit will not decide which methodology is the best; rather, it will defer to the agency's methodology if there has been a reasonable analysis. Friends of Endangered Species, Inc. v. Jantzen, 760 F.2d 976, 986 (9th Cir. 1985); Life of the Land v. Brinegar, 485 F. 2d 460, 473 (9th Cir. 1973) ("disagreement among experts will not serve to invalidate" a NEPA document) With this legal principles in mind, Intervenor's new Contention #3 should be dismissed because:

(i) First, for example, as to alleged hurricane storm surges at the proposed site, Intervenor's fail to present any specific factual basis to challenge the EA's findings of "negligible effects." The NRC looked hard at the facts of prior hurricanes and storm surge, utilized standard and appropriate methodologies, and reached reasonable mathematical conclusions based upon those facts. (EA, p. 10; Topical Report, pp. 3-5 to 3-8)

Indeed, the NRC used the historical "worst case" scenario (Hurricane Iniki, a massive 1992 Category 4 hurricane). That "worst case" scenario caused run-up on Oahu's west coast to the second floor of beachside apartments. However, as noted by the NRC, the run-up in

the relatively protected area of the irradiator was only 2.6 feet above mean sea level, a wave so small it is barely capable of being surfed. Thus, the NRC concluded that as to hurricane runups, there was a negligible potential for hurricane runups to have sufficient velocities to remove the Co-60 source assemblies from the irradiator pool, which was the same conclusion regarding tsunami-wave surge.

Intervenors failed to materially challenge the NRC's hard facts, stylized fluid dynamics calculations, and reasonable conclusions regarding the impacts of historical hurricane run-ups near the irradiator. Instead, Intervenors responded in two ways, neither of which materially disputed the NRC's mathematical calculations: (1) Intervenors (at p. 20) make the disingenuous argument that the EA had no "numerical modeling," all the while ignoring the "stylized fluid dynamic" methodology and calculations contained in the cross-referenced Draft Topical Reports; and (2) Intervenors sermonize about having to perform "complex hydrodynamic equations," but they utterly fail to do any such equations themselves. (Pararas-Carayannis, Declaration, Para. 18)

(ii) Second, Intervenor's Contention #3 also claims that the NRC did not properly analyze the impacts of tsunami wave run-up. (Supp. Contentions at p. 19)

However, the NRC utilized well-recognized "stylized fluid dynamics calculations," and reached its conclusion based up its mathematical calculations: a "negligible potential for tsunami waves could have sufficient velocities to remove the Co-60 source assemblies from the irradiator pool." (EA at 10) Again, the Intervenors responded only that the EA had no "numerical modeling," and that "complex hydrodynamic equations" should have been accomplished by the NRC. However, those responses did not specify any valid claim of law or fact, and in any event, those responses failed to create material disputes of fact.

(iii) Intervenors Contention #3 also alleges that the NRC failed to sufficiently analyze the effects of earthquakes, and possible liquefaction of soil, at the site of the irradiator. The NRC's EA reviewed Hawaii's earthquakes since 1868, and analyzed the strongest earthquakes to hit the Hawaiian Islands since 1948, using the recognized Modified Mercalli Intensity measurements. The NRC also expressly reviewed the designed safety features of the irradiator, and concluded both that damage to the building and equipment caused by an earthquake would "not be transferred to the sources," and also that the risk of loss of control of the radioactive sources would be "negligible."

In response, the Intervenors merely criticized the Modified Mercalli Intensity standards, and again stated that "additional analysis is needed to assess properly the risks earthquakes pose to the irradiator. (Pararas-Carayannis Dec. at 10) Because Intervenors specify no facts, fail to offer any of their own calculations, fail to reach any formal conclusions based upon any calculations, and merely criticize the NRC's methodology, their new Contention #3 does not state a specific factual claim, and in any event, their contention fails to create material disputes of fact.

(iv) The Intervenors further contend (Supp. Contentions, pp. 5-9) that the NRC failed to use the correct methodology in analyzing the possibilities of the irradiator (and its radiation sources) being impacted by an airplane accident, in reaching its conclusions in the EA "that potential aviation accidents would have no significant impacts on public health and safety from the proposed irradiator." (EA at 9)

In response, the Intervenors again express disagreement with the methodology utilized by the NRC, which methodology followed NUREG-0800 (NRC, 1981). Instead, Dr. Resnikoff does his calculations utilizing a Department of Energy methodology, DOE-STD-3014-96.

Intervenor's new Contention #3 should therefore be dismissed on two grounds: (1) the NRC will not choose between the methodology utilized by the Staff and that used by a challenger; rather, it will generally defer to the Staff's expertise; and (2), challenges to a regulation are not permitted during a licensing procedure.

The Intervenor's also challenge the NRC's calculations (EA at 1-1) of the "forces" or pressures which the source assembly must withstand. However, Intervenor's challenge to the NRC's "force" calculations should be dismissed for at least three reasons: (1) the NRC actually performed the calculations as to the strength of the source assemblies; (2), Intervenor's challenge is essentially a challenge to 10 C.F.R. 36.21 which sets the shock and impact requirements for a source assembly, and challenges to NRC regulations are impermissible during a licensing procedure; and (3), Intervenor's and their Experts offer no calculations, no formulas, and no mathematical conclusions establishing just what amount of shock or pressure would be exerted on the source assemblies during an aircraft accident; instead, Intervenor's base their challenge upon speculation and guesswork.

For the above reasons, Intervenor's new Contention #3 challenges the NRC's studies and conclusions regarding the

impacts of hurricanes, tsunamis, earthquakes and possible aircraft accidents. Contention #3 ought to be denied/dismissed because Intervenor's utterly fail to state specific factual bases for their contentions, and in any event, Intervenor's fail to create material disputes of fact or law.

3. Intervenor's New Contention Regarding "Terrorism" Should Be Dismissed As A Matter Of Law.

The Intervenor's new Contention #3 also posits a vague and indefinite contention that "terrorism" impacts should be addressed within the EA. The new Contention ought to be dismissed/denied for several reasons:

a. Notably, much of Intervenor's discussion supporting its "terrorism" contention addresses potential issues in transporting the radioactive materials to and from Hawaii. (Supp. Contentions at p. 22) Insofar as this contention challenges the transportation of the materials to and from Hawaii, the contention is beyond the scope of this licensing procedure and ought to be dismissed.

b. Intervenor's "new" terrorism contention has already been dismissed by virtue of this Board's March 24, 2006 Memorandum and Order. There, the Board noted that the

Commission will issue an "Order Imposing Increased Controls" or a like order, with the security requirements to be set forth in a separate, non-public attachment. Because of the March 24, 2006 dismissal, and also because Intervenors failed to appeal from that Order,⁷ res judicata should bar this second effort to raise this terrorism issue. At the same time, this terrorism contention ought also to be dismissed as beyond the scope of this current proceeding.

c. Intervenors appear to base their second "terrorism" contention upon the decision of San Luis Obispo Mothers for Peace v. NRC, 449 F. 3d 1016 (9th Cir. 2006), cert. denied sub nom, Pacific Gas & Electric Co. v. San Luis Obispo Mothers for Peace, 75 U.S.L.W. 3365 (U.S., Jan. 16, 2007). However, if that is Intervenor's legal basis their contention must fail for at least two reasons. First, the San Luis Obispo decision is distinguishable on the facts from the instant case, because San Luis Obispo dealt with a spent fuel storage facility related to a nuclear power plant; in contrast, the instant proceeding deals with an irradiator, which is normally "categorically

⁷ Intervenors failed to appeal from the Board's adverse "terrorism" ruling in the March 24, 2006 Memorandum and Order. This failure to appeal is magnified by the fact that, at the end of its March 24, 2006 Memorandum and Order, the Board specifically invited an appeal by any party aggrieved by its Order, provided that the appeal was filed within ten (10) days. Intervenors never appealed from the adverse ruling. They should now be barred from belatedly seeking to resurrect the contention.

excluded" from the NEPA process. Here, the "inherently safe" irradiator is miniature in scope, in comparison to a spent fuel storage for a nuclear power plant.

Second, the San Luis Obispo decision was issued on June 2, 2006, meaning that Intervenor's February 9, 2007 terrorism contention was filed far too late, with no "good cause" having been shown excusing the very belated filing. 10 C.F.R. Sec. 2.309(f)(2).

For both reasons, the San Luis Obispo decision is inapplicable to the instant proceeding.

d. Finally, Intervenor's new Contention #3 re "terrorism" purports to describe all manner of damages which could be caused by parties with nefarious intent. However, once again, the Intervenor's fail to provide any "nexus" or "pathway" from the radiation sources securely located the bottom of the irradiator pool, to the manner of use of those sources in Intervenor's various scenarios. For example, Intervenor's fail to state how the bad guys would personally use their hands or other instruments to make a "dirty bomb," without first dying from radiation. One is left to speculate or guess. Because the Intervenor's fail to specify and articulate any feasible "pathway" to the damages which they claim, the contention fails to state

a claim; in any event, Intervenors fail to create a material dispute of fact.

4. Intervenor's Contention That The EA Failed To Address Impacts Associated With Irradiating Foods For Public Consumption Ought To Be Dismissed As Beyond The Scope Of This Proceeding.

Intervenors raise, again for the second time, a contention that the NRC's EA is deficient because it "ignores potential adverse affects on human health associated with irradiating food for human consumption." Intervenors present as support for their contention the Declaration of William W. Au, which is the same September 29, 2005 Declaration as was presented in Intervenor's original October 3, 2005 Petition.

This contention has already been dismissed/denied in this Board's January 24, 2006 Memorandum and Order. There, this Board found that the food contention was based upon "speculation, not facts." Similarly, this second attempt by the Intervenors to assert the same contention supported by the same Declaration of William W. Au ought to be dismissed. The allegation that irradiated food is degraded is still purely speculative, and furthermore, the allegation is now barred by res judicata.

IV. THE DRAFT EA PROPERLY CONSIDERS A SUFFICIENT NUMBER OF REASONABLE ALTERNATIVES, AND INTERVENOR'S CONTENTION #4 OUGHT TO BE DISMISSED/DENIED AS A MATTER OF LAW.

For any of several reasons, Intervenor's new Contention No. 4 ought to be denied/dismitted as a matter of law.

Several ground rules should be remembered. Contrary to the Intervenor's assertion that agencies must consider "all" possible alternatives (at Supp. Contentions at p. 25), the 9th Circuit has repeatedly held that NEPA does not require consideration of "every possible alternative to a proposed action." Westlands Water District v. United States Department of the Interior, 376 F. 3d 853, 871 (9th Cir. 2004); Northern Alaska Environmental Center v. Kempthorne, 457 F. 3d 969 (9th Cir. 2006) Instead, an EA is adequate "if it considers an appropriate range of alternatives, even if it does not consider every alternative." (Emphasis added) Headwaters, Inc. v Bureau of Land Management, 914 F. 2d 1174, 1181 (9th Cir. 1990). An agency need not discuss alternatives which are similar to alternatives actually considered, nor does an agency need to discuss alternatives which are infeasible, ineffective, or inconsistent with the basic policy objectives of the project. *Id.*, at 1180-81, citing

California v. Block, 690 F. 2d 753, 767 (9th Cir. 1982)

Indeed, the applicable regulations allow for brief discussions of alternatives. See 40 C.F.R. Sec. 1508(9)(b).

A. Intervenor's Contention That The EA Failed To Consider Alternate Technologies Ought To Be Dismissed As A Matter Of Law.

Intervenors contend that the EA fails to adequately analyze "all reasonable alternative quarantine control technologies" including methyl bromide gas, heat treatment and electron-beam technology. (Supp. Contentions at pp. 25-26) Beyond those alternatives, the Intervenors offer no new or other meaningful alternatives.

First, the EA in fact discussed the methyl bromide, heat vapor, hot-water treatment, and the electron-beam alternatives in some detail. (See EA at Pp. 6, 10-11; see also Sources Used on Pp. 12-14)

The several disadvantages of each system are set forth by the NRC.

None of the alternative quarantine methods are as satisfactory as the gamma (cobalt-60) irradiation alternative, due to cost prohibitions, product restrictions, undesirable environmental effects, inability of the alternative means to treat fruit and invasive species as effectively as gamma irradiation, lack of

capacity, reliability of the equipment, unacceptable fruit damage and monetary losses, and the like. (EA at 6, 10-11)

Second, where challengers have failed to offer any viable alternatives, then the federal agency need not expand its list of alternatives studied. See Morongo Band of Mission Indians v. FAA, 161 F.3rd 569, 576 (9th Cir. 1998); Save Our Cumberland Mountains v. Kempthorne, 453 F.3rd 334, 347 (6th Cir. 2006) Because the Intervenors fail to offer any other technological alternatives, and because the EA properly discussed the "no action" alternative, Intervenors have failed to "specify" any valid contention in violation of Subsection 10 C.F.R. Sec. 2.309(f)(i).

By virtue of their failure to identify any new alternative and adequate quarantine treatments, Intervenors also fail to establish any genuine, material dispute of fact in violation of 10 C.F.R. Sec. 2.309(f)(vi)

B. Intervenor's Contention No. 4 That The EA Failed To Consider Alternate Locations Ought To Be Dismissed As A Matter Of Law.

The 9th Circuit Court of Appeals has repeatedly held that a challenger to an EA must come forth with specific alternate sites where the challenger is opposing a proposed project. Thus, Intervenors must specifically identify the alternative sites which they propose would be more

environmentally advantageous for the irradiator. Intervenor cannot just claim that the EA failed to consider alternative sites; rather, the Intervenor must themselves specifically identify the so-called alternative sites. See Morongo Band of Mission Indians v. FAA, 161 F.3rd 569, 576 (9th Cir. 1998) ("[T]he Morongo Band has failed to point to a specific feasible alternative that would have bypassed the Reservation"); see also Sierra Club v. Watkins, 808 F. Supp. 852 (DC DC 1991) (challengers specifically named 11 alternate ports through which fuel rods could be shipped); see generally Save Our Cumberland Mountains v. Kempthorne, 453 F.3rd 334, 347 (6th Cir. 2006) ("On appeal plaintiffs have not identified a single alternative that the agency should have considered but did not.")

In the case at bar, Intervenor cannot just generally complain that alternative sites must be studied by the NRC; rather, Intervenor must specifically identify what sites would be appropriate for the NRC to study. Having to actually identify specific alternate sites for an irradiator is what long-time radio commentator Paul Harvey would call "the rest of the story."

There are several reasons for requiring a challenger to specifically identify alternate lot sites for a project such as the irradiator:

First, in the field of land-use policy, an agency need not consider "alternatives which could only be implemented after significant changes in government policy or legislation." City of New York v. United States Department of Transportation, 715 F.2d 732 (2nd Cir. 1983). Intervenors' failure to specifically identify any alternate land sites for the irradiator necessarily leaves the NRC to guess on the suitability of each site within the entire State of Hawaii. Furthermore, the NRC would have to speculate as to what substantial changes in Oahu's and Hawaii's land-use laws, and zoning laws, would be required to accommodate Applicant's irradiator. Because the Intervenors identify no specific, appropriate alternate sites for the irradiator for analysis by the NRC, they fail to state a valid contention.

Second, by their own failure to identify any specific alternate sites for the irradiator, the Intervenors implicitly admit that virtually all other sites in Hawaii are indistinguishable from the site chosen for the irradiator, or that Pa'ina's site is up there with the best and most feasible. Alternatives need not be considered by

an agency if they are indistinguishable from the original proposal. See, e.g., Iowa Citizens for Environmental Quality, Inc. v. Volpe, 487 F.2d 849, 852-53 (8th Cir. 1973); Natural Resources Defense Council, Inc. v. SEC, 196 U.S. App. D.C. 124, 606 F.2d 1031 (1979)

Third, the 9th Circuit Court of Appeals has repeatedly held that an Applicant's compliance with land-use laws is a factor pointing toward the validity of a conclusion that there is no significant impact on the environment. See Goodman Group, Inc. v. Dishroom, 679 F. 2d 182, 186 (9th Cir. 1982); Friends of Endangered Species, Inc. v. Jantzen, 760 F. 2d 976 (9th Cir. 1985). Here, Applicant Pa'ina has worked in concert with local officials and has acted consistently with all local policies on land use. Notably, Intervenor failed to contend or even hint that Pa'ina has failed in any way to comply with local land-use policies. For this third reason, Intervenor's Contention #4 ought to be dismissed.⁸

Because Intervenor has chosen to not specifically identify any alternate Oahu or Hawaii lot sites which they

⁸ A fourth reason why Intervenor's failed to specifically identify a suitable alternative site for the irradiator is because Intervenor may wish to turn this EA process into an endless, meaningless process, akin to a dog chasing its own tail. By not identifying any specific, suitable lot for the irradiator (a site which is properly districted by the State, and zoned by the city), Intervenor may wish to be able to challenge every potential site as unsuitable (and thereby drag out this litigation). Courts do not condone this type of strategy: "A dog chasing its tail always wears himself out, winds up in the same place he started, and never accomplishes anything. So would the litigants" Belmont County Nat'l Bank v. Onyx Coal Co., 177 W. Va. 41, 43, 350 S.E.2d 552, 555 (1986)

believe appropriate for the irradiator, and which could have been studied by the NRC, their Contention is not "specific" and violates Subsection 10 C.F.R. Sec. 2.309(f)(i). By virtue of the same failure to identify any alternative suitable site, Intervenors also fail to establish any genuine, material dispute of fact in violation of 10 C.F.R. Sec. 2.309(f)(vi)

V. INTERVENOR'S NEW CONTENTION NO. 5 OUGHT TO BE DISMISSED AS A MATTER OF LAW BECAUSE INTERVENORS HAVE FAILED TO STATE ANY CLAIM OR OFFER ANY PROOF THAT THE NEPA'S "SIGNIFICANCE CRITERIA" HAVE BEEN TRIGGERED.

Intervenors assert in their "new" Contention #5 that the EA is inadequate, and that an EIS must be done, on the grounds that the effects on the human environment are "highly controversial" or "are highly uncertain or involve unique or unknown risks." (Supp. Contentions at 28-29)

However, not only do Intervenors fail to state with particularity any "grounds" for their Contention #5, but Intervenors also fail to present any evidentiary support for their Contention which would create a material dispute of fact.

First, Intervenors fail to state any facts describing a "high controversy." Intervenors utterly fail to describe with particularity any groundswell of controversy

surrounding the irradiator. For example, Intervenors fail to describe any highly-contentious public meetings reflecting any "high controversy." Pursuant to Subsection (f)(i), Intervenors' failure to specifically state or describe events reflecting a "high controversy" ought to result in the dismissal of their Contention #5.

Second, and closely related to the immediately preceding paragraph, Intervenors have also failed to offer any factual proof or evidence of any "high controversy" surrounding the irradiator, in violation of Subsection (f)(vi). Thus, for example, Intervenors have failed to identify any group of "knowledgeable" individuals who have valid and specific concerns regarding the irradiator. The 9th Circuit has used "knowledgeable individuals" as a key barometer by which to determine whether a project is "highly controversial." Friends of Endangered Species, Inc. v. Jantzen, 760 F.2d 976, 986 (9th Cir. 1985)⁹

Third, the record shows that at the much publicized public meeting on February 1, 2007 regarding the Applicant's irradiator, only 9 persons spoke out against

⁹Intervenors' four experts include: prior and frequent anti-nuclear expert Resnikoff, from New York City; experts Sozen and Hoffman, both from Indiana; and Pararas-Caryannis, apparently retired, from Hawaii. The Declaration of Gordon R. Thompson (from Massachusetts) should be stricken and ignored because it was authored and presented to the ASLB in October 2005, and therefore contains no new facts. The Declaration of William W. Au (from Texas) should also be stricken because it was also authored and presented to the ASLB in October 2005, and therefore contains no new facts, and the Licensing Board has previously rejected Intervenor's contention based upon the alleged ill effects of radiation on food quality.

the project.¹⁰ A married couple who operate an organic food business spoke about the alleged degradation of fruit and produce which has been irradiated (which is irrelevant to these proceedings), so the number of relevant opponents was reduced to seven. Among the remaining seven persons was Intervenor's attorney, who made misleading statements about a "confiscation" (Trans. 2/1/07, p. 47) which comments were immediately contradicted by the highly-respected Dean of the University of Hawaii's School of Tropical Agriculture, Andrew Hashimoto. (Id., at 52)

Of the remaining 6 opponents, one based his entire opposition on vague, unidentified Internet musings. Another young man, who said his wife had made him appear, spoke about how his fishing might be limited by the irradiator, without stating any factual basis. Two ladies from Kalihi Valley proclaimed that their area of town would explode (like Hiroshima or Nagasaki) as a result of the irradiator operations.

Thus, the opposition was extremely small in number, it was not knowledgeable, and it provided no significant or meaningful information to assist the NRC in this "two-way" dialogue EA process. Clearly, this irradiator has stirred

¹⁰ Another individual, who called himself a nuclear physicist, stated he could not determine if he was in favor of the project or against it.

up no "high controversy." See, e.g., Native Ecosystems Council v. United States Forest Service, 428 F.3d 1233 (9th Cir. 2005) (Forest Service project in Helena National Forest deemed not "highly controversial")

To summarize: because Intervenors have failed to specifically allege facts supporting any "high controversy" or "high uncertainty" over the irradiator; and perhaps more importantly, because Intervenors have failed to offer any proof of "high controversy," new Contention #5 ought to be dismissed pursuant to Subsections (f)(i) and (f)(vi).¹¹

VI. INTERVENOR'S NEW SAFETY CONTENTIONS #13 (AIRPLANE CRASHES) AND #14 (NATURAL PHENOMENA) OUGHT TO BE DISMISSED AS A MATTER OF LAW.

Intervenor's February 9, 2007 filing included a "new" Safety Contention #13 contending that the Draft Topical Report failed to properly analyze probabilities and safety consequences from potential airplane crashes. Intervenors also submitted a "new" Safety Contention #14 contending that the Draft Topical Report failed to properly analyze safety risks from natural phenomena.

"New" Safety Contentions #13 and #14 are virtually identical to, parallel with, and mirror images of "new"

¹¹ The 9th Circuit has already held that where an applicant has complied with all local land-use and zoning laws, it is inferred that there will be no significant impact from the irradiator, and a FONSI is appropriate. See Goodman Group, Inc. v. Dishroom, 679 F. 2d 182, 186 (9th Cir. 1982)

Environmental Contention #3. Likewise, Intervenor's "new" Safety Contentions #13 and #14 are based upon the same data (or lack thereof) as is "new" Environmental Contention #3.

Therefore, Applicant Pa'ina requests that new Safety Contentions #13 and #14 be dismissed as a matter of law, for the same rationale and upon the same grounds as Pa'ina requests that new Environmental Contention #3 be denied/dismissed.¹²

VII. CONCLUSION.

For the reasons stated hereinabove, and based upon the lengthy record of these proceedings, Applicant Pa'ina Hawaii, LLC requests that this Licensing Board deny/dismiss "new" Environmental Contentions #3, #4 and #5; and, further, that this Licensing Board deny/dismiss "new" Safety Contentions #13 and #14.

Furthermore, Applicant Pa'ina Hawaii, LLC also requests

¹² "New" Environmental Contention #3 is discussed herein at pp. 3-14 and pp. 15-29, supra. For the same reasons set forth in the above discussions, "new" Safety Contentions #13 and #14 should be denied/dismissed.

that this Licensing Board will grant any and all other relief to Applicant which it deems just and proper.

DATED: Honolulu, Hawaii March 8, 2007



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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

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

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

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

- (1) I am the Vice President and Chief Operating Officer of GRAY*STAR, Inc. ("GRAY*STAR") at 200 Valley Rd., Ste. 103, Mt. Arlington, New Jersey.
- (2) I have been in the irradiator industry for over 28 years and am considered a leading irradiator designer. I have specific experience designing several irradiators, two of which have been built and licensed by the NRC. Not only have I designed irradiators, but I have also operated irradiators as an Irradiator Operator, Radiation Safety Officer and Manager. I have never been cited for an item of non-compliance by the

NRC.

- (3) I am currently a member of the American Nuclear Society and the American Society for Testing and Materials. I have presented many technical papers to various forums on irradiators and irradiator design, including a training session to NRC and Agreement State inspectors from across the country.
- (4) I am the chief designer of the Genesis Irradiators(tm) responsible for all design, engineering, manufacturing and safety/operating procedures.
- (5) I have reviewed the Declarations and associated Reports of Marvin Resnikoff, Mete Sozen, Christoph Hoffmann and George Parakas-Carayannis ("Experts") contained in the February 9, 2007 Supplemental Contentions filed by Intervenors.
- (6) Each of the documents concludes that specific natural disasters or aircraft accidents might lead to a release of radioactive material into the environment. In my opinion, the conclusions of each of these criticisms of the Draft Environmental Assessment and Draft Topical Report are purely speculative and based on false premises as described below.

(7) Each document goes into an analysis of the potential likelihood and potential severity of various incidents that may have impact at the site of the facility. My expertise is specific to the irradiator and I cannot speculate on the accuracy of the potential likelihood and potential severity of the various incidents at the site of the facility. Nor can I evaluate the expertise of the proffered Experts in the specific areas of their Declarations and Reports. However, with the exception of Sozen, none of the Experts area of expertise is related to structural engineering. Sozen's provides a Finite Element Analysis concerning the impact of a 767 aircraft into the building that contains the irradiator, but stops short of analyzing the impact of a 767 aircraft into the irradiator and then bases his conclusions on the latter. Similarly, Resnikoff goes into great detail of aircraft accident probability and then stops short of any analysis of the radiological effects of such an event.

(8) Each of the documents makes a speculative leap of faith that all of the scenarios in question would have a detrimental impact on the irradiator and might lead to loss of shielding and/or release of radioactive material. In each case, the Experts have either ignored or misinterpreted engineering

drawings of the irradiator and its installation available to them either through the initial Application, (as provided by NRC Staff), or drawings available on ADAMS. These same written materials were available to both the Staff and the CNWRA for their environmental review. In my opinion, if the Experts had a proper understanding of the design and installation outlined in the available drawings then they would not be able to make their associated conclusions.

(9) In essence, their Declarations and Reports do not show a clear, or even complete, path to go from a particular natural phenomenon or aircraft accident to a release of radioactive material that might affect the environment.

(10) In my opinion, the statements made by the Experts are not concise and do not support their conclusions that certain events would lead to a release of radioactive material. To respond to the documents, I will break down the essence of their specific contentions as they relate to the design and installation of the irradiator. I will also illustrate how they have not defined a path to connect their event analysis to their conclusions.

The design of the irradiator used a "systems approach" for

safety. Irradiators are often designed as an assembly of different systems; some production related, some safety related. The Genesis was designed differently. It was designed as a piece of integral equipment. The initial design incorporated safety, operational, and regulatory considerations into one package. All of the concerns of the Experts were addressed and incorporated into the design of the irradiator prior to Pa'ina Hawaii submitting an Application to the NRC. A professional review of the drawings provided illustrate how the irradiator handles various physical challenges. The net effect is that in any plausible scenario, including natural phenomena and aircraft crashes, the sources would remain at the bottom of the pool and the chance of losing this control is negligible.

(A) Breach of Pool -

None of the reports have explained how any of the scenarios would breach the pool. The only exception being a comment in the Sozen/Hoffmann report stating "The lip of the irradiator pool, which extends 3 ½ feet above the floor, will likely buckle under the impact of an aviation crash, despite a 6-inch layer of reinforced concrete between two ¼ inch metal shells. Further, because the pool's inner and outer steel layers are likely connected with welded I-beams, which do not perform

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

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

indicate that this structure needs to remain intact to prevent a release of radioactive material. Further, the retaining mechanism for the sources is specifically designed so that in the case of severe force impacting the "lip" of the pool, not only are significant forces not transmitted to the pool (or the sources), but the sources cannot be pulled up out of the pool as a result of these forces. In other words, if portions of the retaining mechanism were pulled out of the pool, they would disconnect from the guide tubes that would disconnect from the plenum that would disconnect from the source rack, ultimately leaving the sources at the bottom of the pool as outlined in the CNWRA report. If Sozen/Hoffmann had understood or correctly analyzed the above ground portion of the Genesis II, they would have noted that any major impact to this portion of the unit would not transmit significant forces to the lower portions of the pool. This includes impact from aircraft, tsunami, storm debris or any other material.

Similarly, Resnikoff's aircraft analysis does not take into account that the height of the pool (from a disaster scenario perspective) is effectively 0". As stated above, the above ground portion of the pool, as well as the rest of the irradiator and building, are sacrificial by design. Ironically, performing a detailed accident probability (from

any reference), that uses "target" height as a criteria would yield a zero percent probability of primary impact.

None of the Declarations or Reports even begin to speculate on how the below ground portion of the pool would be breached by the various disasters. None of their analyses include or take into account the inner $\frac{1}{4}$ " thick stainless steel inner plate, the six inch thickness of concrete, the $\frac{1}{4}$ " thick outer plate, the inner structural steel, the outer structural "banding" of the pool and the approximately 2 feet of concrete surrounding the pool. [Note: The NRC requires only an inner stainless steel liner and concrete pool. Most NRC licensed irradiators do not have the outer steel plate, structural steel or the concrete backfill. Also, most of the stainless steel inner liners on other irradiators are less than $\frac{1}{4}$ " thick.]

Drawings including all of the above were available to the Experts and were considered by the NRC staff and their consultants as part of their review. The analysis of the Experts does not accurately reflect the drawings, and is therefore fundamentally flawed; based on a false premise. The Experts have not indicated a pathway for a disaster scenario to breach the pool and release radioactive material into the environment.

(B) Damage to Sources -

Neither the analysis of the Experts nor the analysis of CNWRA take into account the several layers of protection to the sources provided in the irradiator design (i.e. hold down mechanism, protective beams, plenum). This is understandable, because the ultimate control of the sources is that they will not leave the pool. Although damage to the sources themselves can make the repair of the unit after a disaster scenario more difficult, it does not lead to an environmental issue. It is important to note that the radioactive cobalt-60 is in the form of solid slugs or wafers. The cobalt-60 is not soluble in water. Further, there are three layers of protection around the cobalt-60 (independent from protections provided by the irradiator). They include plating in non-radioactive nickel, and two layers of stainless steel encapsulation. Should all encapsulations fail, the radioactive material would still be located in the pool as a solid metal.

The performance standards as dictated by the NRC for "sealed sources" are defined by rulemaking that is outside the scope of the Application. In any event, the Experts have not clearly defined how the sources would be damaged in such a way as to leave the pool and threaten the environment.

The Experts claim that debris falling into the pool could damage the sources and release radioactive material into the environment, however, they have in no way illustrated how this would be the case. Their analyses are purely speculative and are not supported by the design of sources or the nature of metallic cobalt-60.

(C) Aviation Fuel Fire Damage -

The Reports speculate that an aviation fuel fire would damage the I-beams within the annulus of the pool. First of all, this is very speculative since the I-beams are underground buried in concrete. Second, they are not an active support structure for the pool once the concrete is placed in the annulus at the time of installation. It is implausible that a post incident fire would weaken the pool to some type of structural failure because the scenarios do not include any physical forces that would lead to such a failure after a fire.

The Reports also make reference that an aviation fuel fire could result in the sources being heated beyond NRC performance standards. However, there is no claim or evidence leading to a pathway that would lead to an environmental

release of radioactive material should this somehow occur.

(D) Damage Due to Liquefaction -

The irradiator was designed and installation procedures proffered to negate any effects to the environment from liquefaction. In essence the irradiator pool (and concrete backfill) is an independent, robust, free floating structure. Should the irradiator pool be displaced in a seismic event due to liquefaction, it would not damage the pool. It may prohibit continued operations of the unit; however, this is an operational issue and is not safety related. Discussions on liquefaction may be found on ADAMS. The primary concern is that the building (not the irradiator) could be displaced and impact on the upper sacrificial part of the unit. For this reason, there is an isolation gap between the irradiator pool and the surrounding floor of the building.

(E) Damage Due to Buoyancy Forces -

As stated above, the pool (and concrete backfill) is an independent, robust, free floating structure. There are three support beams located at the bottom of the pool, and I-beam bands around the pool that firmly anchor the pool to the foundation and backfill material. This is to counteract any buoyancy of the pool in the event that there is a differential

of water within the pool vs. surrounding the pool.

Dr. Paparas-Carayannis' analysis does not take these design factors into account and in no event illustrates a path of how buoyancy would impact the environment. This is unsupported speculation.

(F) Loss of shielding water -

There are several references in the Reports to events leading to a loss of shielding water. In no instance have the reports defined an evidentiary path that illustrates a loss of shielding water would effect the environment. Nor do they accurately indicate how the shielding water would be lost.

Also, Dr. Resnikoff apparently believes that any loss of water below the "minimum water level" would lead to loss of all shielding. This is not true. The "minimum water level" mark on the irradiator is to assure that the rim of the unit is always below 2mR/hour during normal operations (NRC regulations). Actually the unit is designed to be far below that level (< 1mR/hour directly above the pool). Further, the NRC regulations state that shielding must be maintained so that the dose to any specific individual does not exceed 100mR/year. Even with a loss of water, Dr. Resnikoff has not

shown an evidentiary path whereby an individual would receive more than 100mR/year. (i.e. No living person would be standing here during a hypothetical aviation fuel fire.) [Note: Dose calculations are closer to his area of expertise than the items that he chose for his analysis, but they have been omitted.]

None of the reports indicate a plausible scenario for significant loss of water. For example, in the aviation fuel scenario, it is most likely that firefighters would respond relatively quickly to the conflagration and 1) put out the fire, and 2) most likely add water. If for any reason the water level of the pool were to be so low as to significantly impact shielding, then water can easily be added remotely (i.e. fire hose).

The Genesis is specifically designed so that any loss of water shielding would lead only to "sky shine". The underground design of the unit prohibits life threatening or environment damaging radiation exposure at ground level away from the unit. None of the Reports indicate how a temporary loss of water, for any reason, would have any effect on safety or the environment.

(G) Salt Water in Pool -

In the event of a storm surge or tsunami depositing salt water in the pool (wave height greater than 42"), there are no immediate safety concerns. Long term remediation would be accomplished by water purification. There would be no damage to the environment.

(H) General -

Much of the analyses deal with damage to parts of the unit independent from the pool. The safety of the Genesis is passive. The irradiator is designed to keep the sources in the pool at all times; "inherently safe" as defined by the International Atomic Energy Agency. With the sources in the pool, none of the above ground systems, including the building itself, are required to protect personnel as well as the environment in the event of a disaster.

The emergency procedures in dealing with any natural or man-made disasters are primarily implemented by Emergency Response Personnel (ERP) independent from Pa'ina Hawaii. If Pa'ina personnel are available to ERP during the time of a disaster, they would assist the ERP. However, as outlined in the Application, ERP are trained by Pa'ina once a year on how to respond to emergency situations at the site. The total

destruction of the facility and the disaster related deaths of potentially all Pa'ina personnel would not have an impact on emergency response. In any event, the irradiator would not significantly contribute to the severity of the disasters as outlined by the Experts.

(11) Nowhere in the reports is there an illustration of how a component of the irradiator is incapable of withstanding a specific force leading to a threat to safety or the environment. In my opinion, none of the analyses, as they pertain to the irradiator, raise factual disputes. They are merely speculative in nature.

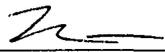
(12) All of the Experts surmise that there would be a major disaster at the site. This includes the destruction of the building and the destruction of all irradiator support systems. To paraphrase their conclusions: 'If there is a major natural or man-made disaster at the site, then radiation and radioactivity would be released to the environment'. There is no evidentiary path to their conclusions. Further, even if their highly speculative conclusions are upheld, they still have not indicated how they would have a significant impact on the environment. In other words, they have made specific analyses of disasters and followed with unsupported

(speculative) claims as to the consequences of those disasters.

- (13) In conclusion, the Experts have not defined a plausible pathway to indicate how there would be a release of radioactivity that might effect the environment. Their analyses are pure speculation. Based upon actual facts, the CNWRA Draft Report correctly concludes that the probability of loss of control of the radioactive material is negligible.

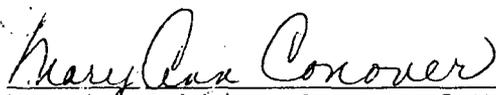
I declare under penalty of perjury that the factual information provided above is true and correct to the best of my knowledge and belief, and that the professional opinions expressed above are based on my best professional judgment.

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



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

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



Notary Public, State of New Jersey

My Commission Expires _____

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

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing "APPLICANT PA'INA HAWAII, LLC'S ANSWER TO INTERVENOR CONCERNED CITIZENS OF HONOLULU'S CONTENTIONS RE: DRAFT ENVIRONMENTAL ASSESSMENT AND DRAFT TOPICAL REPORT" dated March 8, 2007 in the captioned proceeding have been served as shown below by deposit in the regular United States mail, first class, postage prepaid, this March 8, 2007. Additional service has also been made this same day by electronic mail as shown below:

Administrative Judge
Thomas S. Moore, Chair
Atomic Safety and Licensing Board
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U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
(e-mail: tsm2@nrc.gov)

Dr. Anthony J. Baratta
Administrative Judge
Atomic Safety and Licensing Board
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David L. Henkin, Esq.
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DATED: Honolulu, Hawaii, March 8 2007



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March 8, 2007

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

Re: Docket No. 030-36974
ASLBP No. 06-843-01-ML
"Applicant Pa'ina Hawaii, LLC's
Answer To Intervenor Concerned
Citizens Of Honolulu's Contentions
Re: Draft Environmental Assessment
And Draft Topical Report"

Dear Secretary:

I represent the legal interests of Pa'ina Hawaii, LLC, which has applied for a Materials License.

Pursuant to your regulations, please find enclosed an original and two (2) copies of the above document.

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

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

Very respectfully yours,



Fred Paul Benco

Encl.

cc: All parties on Certificate of Service