UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

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

REQUEST FOR HEARING BY CONCERNED CITIZENS OF HONOLULU

I. INTRODUCTION

Pursuant to 10 C.F.R.§ 2.309, petitioner Concerned Citizens of Honolulu hereby requests a hearing regarding this proceeding on Pa'ina Hawaii, LLC's application to build and operate a commercial pool type industrial irradiator in Honolulu, Hawai'i, at the Honolulu International Airport.[1] This filing also responds to a Federal Register notice published by the U.S. Nuclear Regulatory Commission ("NRC") at 70 Fed. Reg. 44,396 (Aug. 2, 2005), establishing a deadline of October 3, 2005, for hearing requests.

As discussed below, Concerned Citizens has standing to participate in this NRC licensing proceeding on behalf of its members, under either a "proximity-plus" or traditional standing analysis. See Section II, infra. Concerned Citizens request a hearing to address safety and related concerns regarding Pa'ina Hawaii's license application (Section III.A, infra) and the

[1] Pursuant to 10 C.F.R. § 2.304(e), Concerned Citizens of Honolulu hereby designates David L. Henkin of Earthjustice's Honolulu office as the person on whom service may be made. Mr. Henkin's address is: Earthjustice, 223 South King Street, Suite 400, Honolulu, Hawai'i 96813. His electronic mail address is: dhenkin@earthjustice.org. His facsimile number is: (808) 521-6841.

All communications with Concerned Citizens of Hawai'i regarding this petition should be addressed to Mr. Henkin. Pursuant to 10 C.F.R. § 2.309(d)(1)(i), Concerned Citizens of Hawai'i states that its address is: 3254 Hoolulu Street, Honolulu, Hawai'i 96815. Its phone number is: (808) 735-2940.

NRC's failure to comply with the National Environmental Policy Act ("NEPA") by preparing an environmental impact statement ("EIS") – or, at a minimum, an environmental assessment ("EA") – to evaluate the environmental impacts associated with Pa'ina Hawaii's proposal as well as alternatives that might achieve the goal of treating Hawaiian produce for fruit flies with less environmental harm (Section III.B, infra).

II. STANDING

A. Representational Standing.

A petitioner organization can demonstrate representational standing to participate in an NRC licensing proceeding on behalf of its members. See International Uranium (USA) Corp. (White Mesa Uranium Mill), CLI-01-21, 54 NRC 247, 250 (2001); Power Authority of the State of New York (James A. FitzPatrick Nuclear Power Plant; Indian Point, Unit 3), CLI-00-22, 52 NRC 266, 293 (2000). Concerned Citizens of Honolulu is a grassroots, unincorporated environmental organization that was created to ensure the people who live and work in Honolulu will be adequately protected from potential public health and safety and environmental impacts associated with Pa'ina Hawaii's proposed irradiator and to ensure that a thorough environmental review of the proposal – including consideration of alternate technologies and alternate locations that could achieve the project's goals with less risk to the public and environment – is performed before any project approvals are issued. As demonstrated by the attached declarations, Concerned Citizens of Honolulu's members include individuals who live, work, own property, and/or recreate in areas adjacent to Honolulu International Airport and who rely on the airport to travel to neighbor islands and the continental United States for work, for recreation, and/or to maintain relations with their friends and family. See Declarations of Brian Coulson, Marie-Therese Knoll, Darryl Ng, David Paulson, Grace Simmons, and Lia Young Hunt, attached

hereto. These individuals have authorized Concerned Citizens of Honolulu to represent them in this proceeding.

B. "Proximity-Plus" Standing

In order to establish standing in the classic fashion, a petitioner must allege a concrete injury that would be caused by the challenged action, and could be redressed by a favorable decision in litigation. See Georgia Institute of Technology (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 115 (1995). Under the NRC's precedents, however, there are circumstances in which petitioners may be presumed to have standing based on their geographic proximity to the facility. See Sequoyah Fuels Corp. and General Atomics (Gore, Oklahoma Site), CLI-94-12, 40 NRC 64, 75 n.22 (1994).

To establish standing in a proceeding like this one, which involves materials licensing, proximity must be coupled with a showing that the facility's activities involve a "significant source of radioactivity producing an obvious potential for offsite consequences." Id. (citing Armed Forces Radiobiology Institute (Cobalt-60 Storage Facility), ALAB-682, 16 NRC 150, 153-54 (1982); Northern States Power Co. (Pathfinder Atomic Plant), LBP-90-3, 31 NRC 40, 45 (1990)). In other words, for a neighbor to the proposed Pa'ina Hawaii irradiator to have presumptive standing depends upon three factors: (1) proximity to the facility, (2) the presence of a "significant source" of radioactivity at the facility, and (3) that source's "obvious potential" to cause offsite damage due to its radioactive properties.

In CFC Logistics, Inc. (Cobalt-60 Irradiator), LBP-03-20, 58 NRC 311 (2003), the Atomic Safety and Licensing Board analyzed "proximity plus" standing in the context of a license application for a Cobalt-60 ("Co-60"), pool type food irradiator nearly identical to the one proposed by Pa'ina Hawaii. The Licensing Board initially concluded that the amount of Co-

60 authorized for use at the facility – up to 1 million curies – represented a "significant source of radioactivity" for purposes of applying "proximity-plus" standing. Id. at 319. It then rejected claims that, due to the passive nature of the facility's protective systems, "there was no obvious potential for offsite consequences." Id. Instead, it concluded "it would be neither 'extravagant' nor 'a stretch of the imagination' to presume that some injury to neighbors could occur within the vicinity of the CFC irradiation facility," such as under the plausible, even if unlikely, "scenario in which an accident of some sort could damage the armored pool containing the Co-60 at the CFC facility." Id. at 320 (quoting Georgia Institute of Technology, 42 NRC at 117). Accordingly, the Licensing Board found "the cobalt-60 inventory that the license would authorize the Company to possess would be a significant source of radioactivity that produces an obvious potential for offsite consequences" and held "it is appropriate to make the 'proximity-plus presumption' available in this proceeding." Id. at 321.

For the same reasons, the Commission should allow Concerned Citizens to establish standing based on "proximity-plus." The same types of accidents envisioned in CFC Logistics are equally plausible in this case, which involves the same basic irradiator design. Indeed, in light of the unique threats associated with the proposed location of the Pa'ina Hawaii irradiator detailed below, the risk of an accidental release is far greater than the one found adequate to support "proximity-plus" standing in CFC Logistics.

Later in the CFC Logistics proceeding, the Licensing Board determined that any petitioner who lived within ¾ mile from the facility satisfied the requirements of "proximity-plus" standing. 60 NRC 475, 485 (2004). In so finding, the Board "hasten[ed] to add … that the 'obvious potential' aspect of 'proximity-plus' standing is not a concept that can be applied with engineering or scientific precision … ." Id. at 487. Given the particular factual circumstances of

the CFC Logistics application, the Board felt "comfortable with limiting the distance that provides presumptive standing to considerably less than the 3 miles that was determined for the Armed Forces panoramic irradiator, even though the sources here are authorized to be three times larger." Id. at 487; see also Armed Forces, 16 NRC at 154 (holding that residing 3 miles from 320,000-curie Co-60 irradiator established standing based on geographic proximity).

Unlike the irradiator at issue in CFC Logistics, which was located in a remote, rural Pennsylvania county, Pa'ina Hawaii's irradiator would be in the middle of urban Honolulu, a city of approximately 400,000 people. Placing up to a million curies of Co-60 on the grounds of Honolulu International Airport and adjacent to Hickam Air Force Base and Pearl Harbor would present a tempting target for terrorists intent on disrupting one of the major transportation hubs in the Pacific and on striking near major military installations. Resnikoff Dec. ¶¶ 21-22; Thompson Dec. ¶¶ III-3, V-5 to -6, VI-3; see also Public Interest Report, Dirty Bombs: Response to a Threat, (March/April 2002) (Exh. F); National Nuclear Safety Administration ("NNSA") Press Release (Apr 13, 2005) (Exh. H).[2] Aviation accidents – which, on average happen more than twice a year at Honolulu International Airport – pose another unique threat to Pa'ina Hawaii's proposed irradiator, which would be located immediately adjacent to several runways, rendering it vulnerable to airplane crashes on either take-off or landing. Resnikoff Dec. ¶ 24; NTSB Aviation Accident Database Query (Exh. G).

The significant risk of natural disasters further distinguishes Pa'ina Hawaii's irradiator from the one at issue in CFC Logistics. The proposed site for the irradiator is in a tsunami evacuation zone and, thus, at risk from damage associated with wave run-up similar to that

[2] That the Reef Runway next to which the irradiator would be built is an alternate landing site for the space shuttle makes the target even more attractive to those seeking to strike a blow against symbols of American power. See Resnikoff Dec. ¶ 24.

experienced in the devastating tsunami in southeast Asia in December 2004. Resnikoff Dec. ¶ 23; O'ahu Civil Defense Agency, Tsunami Evacuation Oahu Map 19: Airport to Waikiki (Exh. I); see also Deborah Adamson, Hawai'i tsunami zone maps may be flawed, Honolulu Advertiser (Jan. 11, 2005), available at http://the.honoluluadvertiser.com/article/2005/Jan/11/ln/ln03p.html (noting "effects of tsunami generated by local events – earthquakes or undersea landslides – may be significantly under-estimated by the existing maps") (Exh. J). The irradiator would also be vulnerable to wave run-up and high winds associated with a major tropical storm or hurricane, as illustrated by the catastrophic losses suffered along the Gulf Coast in September 2005 from Hurricanes Katrina and Rita. Resnikoff Dec. ¶ 23; Oahu Civil Defense Agency, "Hurricanes in Hawaii," available at http://www.honolulu.gov/ocda/hurr1.htm (Exh. K).

Because of the significant risks of widespread dispersal of radioactive material from human and natural threats not present in the CFC Logistics case, "proximity-plus" standing should be available to petitioners who live, work, or have "frequent contacts" far beyond the ¾ mile limit established under the specific facts of that earlier proceeding. Sequoyah Fuels, 40 NRC at 75 n.22. A study prepared by the Federation of American Scientists concluded that, if a single Co-60 "pencil" from an irradiator such as the one Pa'ina Hawaii proposes to build were dispersed by an explosion, an area of approximately one-thousand square kilometers would be contaminated. Resnikoff Dec. ¶ 22; Thompson Dec. ¶ V-3; Public Interest Report at 7. Because such an event is "plausible," anyone living, working or having frequent contacts in Honolulu, as all Concerned Citizens' members do, should have the benefit of the "proximity-plus" doctrine. CFC Logistics, LBP-03-20, 58 NRC at 320-21.

Even if the NRC were to limit application of "proximity-plus" standing to only those with frequent contacts within ¾ mile of the proposed site for the Pa'ina Hawaii irradiator, Concerned

Citizens satisfies that test. Concerned Citizens has several members who work within ¾ mile of the proposed irradiator site, sufficient proximity to "be presumed to be affected by operation of the facility." Georgia Institute of Technology, 42 NRC at 114; see Coulson Dec. ¶ 2; Knoll Dec. ¶ 2; Young Hunt Dec. ¶ 2; see also International Uranium (USA) Corp., 54 NRC at 250 (organization has standing if "at least one of its members may be affected by the licensing action"). Members also frequently fly in and out of the airport and, thus, spend time on runways or at the flight service station, well within ¾ mile of the facility. See, e.g., Knoll Dec. ¶¶ 3-4; Paulson Dec. ¶ 3; Simmons Dec. ¶ 3. Such contacts are also adequate to establish "proximity-plus" standing. See Northern States Power Co. (Pathfinder Atomic Plant), LBP-90-3, 31 NRC 40 (1990) (commuting past plant adequate); Virginia Electric and Power Company (North Anna Nuclear Power Station, Units 1 and 2), ALAB-522, 9 NRC 54, 57 (1979) (recreational canoeing "in the general vicinity of the plant" adequate).

C. Traditional Standing.

Even if "proximity-plus" standing did not apply, Concerned Citizens can easily make the specific "injury-in-fact" showing under classic standing principles. CFC Logistics, 60 NRC at 489. To demonstrate standing, Concerned Citizens must allege:

> (1) an actual or threatened, concrete and particularized injury, that (2) is fairly traceable to the challenged action, (3) falls among the general interests protected by the Atomic Energy Act (or other applicable statute, such as the National Environmental Policy Act) and (4) is likely to be redressed by a favorable decision.

Sequoyah Fuels Corp. (Gore, Oklahoma Decommissioning), CLI-01-2, 53 NRC 9, 13 (2001).

As discussed in the declarations of Drs. Resnikoff and Thompson, construction and operation of Pa'ina Hawaii's proposed irradiator would subject Concerned Citizens' members to threats of radiation exposure through incidents including, but not limited to, mechanical failures,

power outages, airplane accidents, acts of sabotage or terrorism, hurricanes, and tsunamis. "[A] minor exposure to radiation, even one within regulatory limits, is sufficient to state an injury in fact" for standing purposes. Duke Cogema Stone & Webster (Savannah River Mixed Oxide Fuel Fabrication Facility), LBP-01-35, 54 NRC 403, 417 (2001), rev'd on other grounds, CLI-02-24, 56 N.R.C. 335 (2002) (citing Yankee Atomic Electric Co. (Yankee Nuclear Power Station), CLI-96-7, 43 NRC 235, 247-48 (1996)); see also id. at 420 (standing inquiry does not require precision regarding probability of petitioner receiving unwanted dose of radiation). "[T]he asserted harm here – injury to the health and safety of [Concerned Citizens'] members from ionizing radiation – is clearly encompassed by the health and safety interests protected by the Atomic Energy Act. Id. at 417; see also 42 U.S.C. § 2013.

In addition, approval of Pa'ina Hawaii's license application in the absence of any environmental review pursuant to NEPA would cause procedural injury to Concerned Citizens and its members. NEPA is "our basic national charter for protection of the environment." 40 C.F.R. § 1500.1(a). It requires "each federal agency spearheading a major federal project," including the NRC, "to put on the table, for the deciding agency's and for the public's view, a sufficiently detailed statement of environmental impacts and alternatives so as to permit informed decision making." Lands Council v. Powell, 395 F.3d 1019, 1027 (9th Cir. 2005); see also 40 C.F.R. § 1500.1(c) (ultimate goal to foster "better decisions," helping federal agencies make decisions "based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment"). NEPA accomplishes its goals by ensuring environmental information – including analysis of "alternatives that might be pursued with less environmental harm," Lands Council, 395 F.3d at 1027 – "is available to public officials before decisions are made and before actions are taken." 40 C.F.R. § 1500.1(b) (emphasis added).

By promoting environmentally sensitive decision-making, NEPA's requirement to prepare EISs and EAs protects Concerned Citizens' "concrete interests" in avoiding harm to areas in Hawai'i its members "use and enjoy." Citizens for Better Forestry v. U.S. Department of Forestry, 341 F.3d 961, 971 (9th Cir. 2003). Conversely, refusal by the NRC to perform any environmental review of Pa'ina Hawaii's proposed irradiator would cause procedural injury to Concerned Citizens and its members, all of whom reside, work and/or recreate in areas potentially affected by radiation releases from the facility. "The 'asserted injury is that environmental consequences might be overlooked' as a result of deficiencies in the government's analysis under environmental statutes." Id. at 971-72.

Concerned Citizens' aforementioned injuries are likely to be redressed by a favorable decision. Denying or requiring substantial modifications to Pa'ina Hawaii's license application would help avoid or minimize the threats to public health and safety and to the environment that would otherwise harm Concerned Citizens. Moreover, a decision to prepare the requisite NEPA analysis prior to rendering a decision on Pa'ina Hawaii's application would cure Concerned Citizens' procedural injury. See id. at 976 ("A petitioner 'who asserts inadequacy of a government agency's environmental studies … need not show that further analysis by the government would result in a different conclusion. It suffices that … the [agency's] decision could be influenced by the environmental considerations that [the relevant statute] requires an agency to study") (alterations and emphasis in Citizens for Better Forestry).

III. CONTENTIONS SOUGHT TO BE RAISED

A. Safety and Related Issues Under Atomic Energy Act And Implementing Regulations.

In its license application, Pa‘ina Hawaii has failed to address important issues related to the protection of public health and safety. Since Pa‘ina Hawaii has not made the requisite showing that its "proposed equipment and facilities [would be] adequate to protect health and minimize danger to life or property," its application should be denied. 10 C.F.R. § 30.33(a)(2).

1. Inadequate Procedures to Ensure Safe Loading and Unloading of Cobalt-60 Pencils.

Loading and unloading the fresh and used Co-60 pencils present a risk of a cask drop. Resnikoff Dec. ¶ 12. Similar to a reactor, where a shipping cask has the potential to pass over the fuel pool and drop onto fuel rods, the irradiator here must have a system to prevent the cask from passing over the Co-60 pencils. Id.; see also id. ¶ 14 (doubtful crane designed to stop where sources are located). Moreover, the irradiator must have a single failure proof crane. Information regarding these essential safety measures is missing from the application, contrary to the requirement of 10 C.F.R. § 36.39(c) that "the licensee shall design the pool to assure…that a dropped cask would not fall on sealed sources."

In its application, Pa‘ina Hawaii needs to assess the potential for release of Co-60 into the pool water if a 3 to 6.5 ton cask were to drop on the Co-60 pencils and bend the pencils. Resnikoff Dec. ¶ 12. It must also discuss, if the pencils were bent in a cask drop accident, how these bent Co-60 rods would be packaged and sent back to the manufacturer, i.e., how the applicant intends to recover from this accident. See 10 C.F.R. § 36.53(b). The potential for damage to the pool liner, and the potential impact of such an accident, must also be assessed.

The loading and unloading of Co-60 at the proposed irradiation facility would be precarious and susceptible to a major accident. Resnikoff Dec. ¶ 13. A nearly identical irradiator designed by Gray*Star was involved in CFC Logistics. The license application for that facility stated that a shipping cask containing 200,000 curies of Co-60 sources would be inserted into the pool. Sources would then be removed and placed underwater on one side of the pool, away from the cask. The plenum would be removed before this operation. As the shipping cask, which could weigh between 3 and 6.5 tons, is removed from the pool, it could drop onto the sources, seriously contaminating the pool water. This contamination would have to be removed with ion exchange columns that would become extremely radioactive. See 10 C.F.R. § 36.57(e). The steel-liner of the pool would become radioactive. Some of this radioactivity could be released to the sanitary sewers and the air. Resnikoff Dec. ¶ 13; see also id. ¶ 16.

Though the fuel suppliers and presumably the shipping casks are likely the same as the Genesis irradiator at issue in CFC Logistics, Pa‘ina Hawaii’s application contains no details about the type and weight of the cask, how the cask would be unloaded from the trailer bed and how the cask would be attached to the crane and lowered into the water. Id. at ¶ 13. Similar to operations at Neutron Products Incorporated (“NPI”) in Dickerson, Maryland, where Co-60 material was shaped to fit different irradiators, Co-60 released to the environment could lead to a significant direct gamma dose, and would be expensive to decontaminate. Id. At NPI, despite the presence of HEPA filters to capture particulates, Co-60 was found off-site; the direct gamma dose rates were five times NRC regulatory limits.

The potential for a cask drop accident at Pa‘ina Hawaii’s proposed irradiator similarly poses a serious risk of irreparable harm, violating the requirement in 10 CFR § 30.33(a)(2) that “proposed equipment and facilities [must be] adequate to protect health and minimize danger to

life or property." Despite this, the application has no emergency procedures for accidents that may occur during loading and unloading sources, violating 10 C.F.R. § 36.53(b). See Resnikoff Dec. ¶ 15.

2. Failure to Address Risks of Overheating.

Pa'ina Hawaii has not shown the system will not overheat. Resnikoff Dec. ¶ 17. The thermal projections based on worst case assumptions are redacted. These should be provided.

As far as can be ascertained from the redacted application, the helium system surrounding the Co-60 pencils is static. Id. Apparently, the heat will be dissipated through the helium to the plenum walls and then to the pool water. It is not clear how the temperature will be continuously monitored within the plenum. If the plenum overheats, there is danger that radioactive material will be released to the pool water. The Co-60 could then become airborne, be released to the air within the irradiator facility and subsequently to the external environment. The gamma dose rates would become elevated within the irradiator building. The ion exchange resins would become highly radioactive, and have to be transported to a low-level radioactive waste landfill, violating 10 C.F.R. § 36.57(e). Pa'ina Hawaii has not proposed shutdown criteria, if the Co-60 concentrations in the pool water or air above the pool reach certain specific concentrations.

When the plenum rack is loaded with Co-60 pencils, the loading is done underwater with long handling tools. Resnikoff Dec. ¶ 18. The plenum is then fit over the rack and helium is pumped in and water out of the plenum. At this point the Co-60 rods will heat up and the water on the Co-60 will evaporate. Pa'ina Hawaii fails to discuss the effect of this evaporation process and whether radioactive materials will enter the helium environment and the pool water. Reviss, one of the suppliers listed in Pa'ina Hawaii's application, has previously expressed concern about potential damage to the Co-60 pencils in this evaporation process. Id.

The application does not indicate who is carrying out the thermal calculations, calling into question whether they are being done correctly. Id. ¶ 19. Reviss, one of the fuel suppliers, provided the thermal calculations for the nearly identical irradiator at issue in CFC Logistics. Neither the designer, Gray*Star, nor the applicant have the expertise to analyze the thermal conditions in the plenum. Id.

3. Inadequate Provision for Quality Assurance.

While Gray*Star designed the Genesis II irradiator that Pa‘ina Hawaii proposes to build and operate, it is not clear who will supply the components. Id. ¶ 20. The application indicates the Co-60 pencils would be supplied by either Nordion (Canada) or Reviss, which has Co-60 generated in Russia. How the NRC can possibly ensure the quality assurance of the process without actually inspecting the Canadian and Russian facilities is not spelled out in the application. According to 10 C.F.R. § 36.59(b), leak testing of the source must be carried out, but the application makes no provision for it.

4. Failure to Address Accidents Involving Prolonged Loss of Electricity.

Contrary to 10 C.F.R. § 36.53(b)(6), Pa‘ina Hawaii’s application fails to describe emergency procedures for accidents involving a prolonged loss of electricity. For example, Pa‘ina Hawaii does not appear to have an emergency electric generator in case of an extended power failure. Without clear measures for recovering from a prolonged loss of electricity, the safety of neighboring members of the public cannot be assured. Resnikoff Dec. ¶ 27.

Moreover, the license application does not analyze the range of accidents that would arise from a loss of electricity. While the application does discuss the possibility of the loss of electricity supply in terms of overheating of sources, other credible accidents are not considered.

Id. ¶ 28.[3] For instance, movement of product near the plenum containing Co-60 sources occurs under bells inserted under water; the bottom of the bell is open, but water cannot enter due to a compressed helium supply. In the event that power is lost while a bell is underwater, the product could become water-logged and distribute itself within the pool, thereby clogging the filters and the water circulation system. In the changeover to new filters, Co-60 could bypass the containment system and be released as wastewater. Pa‘ina Hawaii does not discuss this potential accident, or any procedures for recovering from this loss of electricity accident in which product floats in the pool.

Furthermore, in discussing the possibility of the loss of electricity supply in terms of overheating of sources, Pa‘ina Hawaii fails to provide specific information regarding the heat rate and the number of hours till the source cladding degrades. Id. ¶ 29. In order to know how long the electricity may remain off before a serious accident ensues, the application needs to include detailed information on how rapidly the sources will heat up and the consequences of overheating. This information is completely missing. In the event of overheating, the cladding around the sources could fail, contaminating the air and overloading the HEPA filters. Co-60 could be released to the external environment. Id.

5. Lack of Procedures to Address Break in Helium Line.

Contrary to 10 C.F.R. § 36.53, Pa‘ina Hawaii has no emergency procedures for accidents involving a break in the compressed helium line. This would allow water to enter the bells, and degrade the product. Id. ¶ 30.

[3] As discussed in Part III.A.2, supra, and below, the application’s analysis of the risks of overheating is inadequate.

6. Inadequate Provision for Natural Phenomena.

As discussed in Part II.B, supra, the proposed site for the irradiator is in a tsunami evacuation zone and, thus, at risk from damage associated with wave run-up similar to that experienced in the devastating tsunami in southeast Asia in December 2004. The irradiator would also be vulnerable to wave run-up and high winds associated with a major tropical storm or hurricane, as illustrated by the catastrophic losses suffered along the Gulf Coast in September 2005 from Hurricanes Katrina and Rita. Pa‘ina Hawaii’s application has no discussion of the potential for such emergency events and the procedures that would be implemented should they occur, in violation of 10 C.F.R. § 36.53(b)(9).

7. Failure to Address Risks of Aviation Accidents.

Pa‘ina Hawaii’s application fails completely to address the likelihood and consequences of an air crash, either on take off or landing. As noted in the declaration of Dr. Resnikoff, the proposal to locate a nuclear facility in such close proximity to an airport runway is likely unprecedented. Resnikoff Dec. ¶ 24.

According to the National Transportation Safety Board, in the 23-year period between 1982 and 2004, on average 2.17 accidents per year occurred at the Honolulu International Airport. Id.; see also NTSB Aviation Accident Database Query. This is an extremely high accident rate for a nuclear facility located in such close proximity to a runway. Resnikoff Dec. ¶ 24. Pa‘ina Hawaii must analyze the likelihood and consequences of an air crash, and discuss whether the location is appropriate for such a facility, including whether the facility can be hardened to mitigate the consequences of an accident.

8. Failure to Address Risks of Accidents Associated with Transporting Cobalt-60 to the Facility.

Pa‘ina Hawaii’s application fails to address risks to the public and the environment associated with transporting Co-60 pencils to the proposed facility. Resnikoff Dec. ¶ 25. Unlike irradiators located in the continental United States, whose source material can be supplied by rail or truck, this facility would require Co-60 to arrive by plane or boat, presenting unique risks. In particular, if the shipping cask is to be transported by plane, the impact of an air crash must be assessed. Id. The transportation cask is likely designed to withstand a 30 foot drop, but, obviously, planes fly higher than 30 feet. Id. If the cask is to be transported by ship, a discussion of the modal transfers and the likely exposure to workers, inspectors and the public must be provided. Id. The application must also address the threats to the communities through which sources arriving by ship at Honolulu Harbor must transit to reach the proposed irradiator site.

9. Inadequate Provision for Facility Security.

Co-60 is an attractive target for terrorists because it can be used to make dirty bombs. Resnikoff Dec. ¶ 21; Thompson Dec. ¶¶ V-1 to -6. It is also well-known that in general, nuclear facilities are targets of the Al Qaeda organization. If Co-60 were stolen from the proposed irradiator, or if the facility were attacked, Co-60 could be released into the environment, causing adverse health effects and spreading contamination that would be expensive to clean up. Resnikoff Dec. ¶¶ 21-22; Thompson Dec. ¶¶ V-2 to -4. Pa‘ina Hawaii improperly proposes to place a major sabotage target into the local community without adequate provision to address threats to the community. Cf. Thompson Dec. ¶¶ VI-1 to -3 (lower risk alternatives exist).[4]

[4] Unlike production and utilization facilities, material licensing facilities like Pa‘ina Hawaii’s irradiator are not relieved of the obligation to ensure adequate protection against

10. Inadequate Provision for Protecting Cobalt-60 Sources in Transit.

Even before arriving at the Pa‘ina Hawaii facility, Co-60 sources, in transit from Canada or Russia, would be vulnerable to terrorist attack. Resnikoff Dec. ¶ 31; Thompson Dec. ¶ V-2. The NRC does not require armed escorts for Co-60 sources. Yet, potential saboteurs have significant fire power at their disposal. Resnikoff Dec. ¶ 31. The TOW2 and MILAN anti-tank missiles have a range of one km and can penetrate one meter of steel, far more steel and lead than the walls of a shipping cask. The newer Russian Koronet missile, used by former Iraqi armed forces, can penetrate 1.2 meters of steel and can be aimed precisely at a distance up to 5 km. These weapons have the ability to penetrate a shipping cask and disperse its contents. NUREG-0170, the document that potential NRC licensees cite in supporting its safety assurances, is silent on these safety and security issues.

A Co-60 cask shipment, attacked within a city, could cause major environmental pollution and cancer fatalities. Resnikoff Dec. ¶ 32. Local residents would clearly have a greater risk than other persons. While shipments could leave Canada or Europe by a number of routes, once they get close to the facility, the route options are decidedly limited. Such an accident would subject the airport passengers and workers and residents of neighboring communities to irreparable harm. In addition to adverse health effects caused by contamination, such an accident would have significant economic impacts. The cost to decontaminate an accident involving a spill of 200,000 curies of Cobalt-60 could easily exceed $1 billion. Id.

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attacks by foreign enemy governments or individuals. Compare 10 C.F.R. § 50.13 with id. pt. 36.

11. Inadequate Liability Insurance.

Pa‘ina Hawaii has offered the minimum $113,000 financial assurance for decommissioning, but, as discussed above, this would clearly be inadequate if a major accident were to occur. Id. at 34. Because of the unique threats associated with the proposed irradiator, the minimum level of financial assurance for decommissioning set forth at 10 C.F.R. § 30.35(d) is inadequate to ensure protection of public safety and health and the environment. Upon admission as a party to this licensing proceeding, Concerned Citizens intends to petition that the application of 10 C.F.R. § 30.35(d) be waived, or an exception made for this proceeding, due to the aforementioned “special circumstances.” 10 C.F.R. § 2.335(b).

12. Improper Redacting Application

The version of Pa‘ina Hawaii’s application available for public review on the NRC website has much of the material redacted, with no justification given for the materials that are withheld. Resnikoff Dec. ¶ 26. Comparison with the publicly available version of the application for the nearly identical CFC Logistics irradiator (Docket No. 30-36239-ML), which was not redacted in the same heavy-handed manner, indicates the lack of any proprietary or security basis for the redactions in this case. Cf. id. ¶¶ 3, 13, 21 (relying on CFC Logistics application to inform analysis of Pa‘ina Hawaii application).

Depriving the public of important information regarding Pa‘ina Hawaii’s proposed irradiator has precluded Concerned Citizens of the opportunity fully to evaluate the project’s environmental impacts and determine how its interests may be affected. Id. ¶ 26; Thompson Dec. ¶ III-2; see, e.g., Resnikoff Dec. ¶ 17, 24, 25 (noting redacted information). Particularly in light of the NRC’s requirement to include detailed contentions in support of requests for hearing, 10 C.F.R. § 2.309(f), which presupposes that the public is informed about the proposed project,

the NRC's failure to provide adequate detail regarding Pa'ina Hawaii's application subverted the Atomic Energy Act's public hearing requirement, 42 U.S.C. § 2239, and deprived Concerned Citizens of due process of law.

B. Failure to Comply with NEPA.

1. Failure to Explain Application of Categorical Exclusion.

In its Federal Register notice of consideration of Pa'ina Hawaii's license application, the NRC announced that "[a]n environmental assessment for this licensing action is not required, since this action is categorically excluded under the provisions of 10 CFR 51.22(c)(14)(vii)." 70 Fed. Reg. at 44,396. While NEPA allows agencies to identify "typical classes of action … [w]hich normally do not require either an environmental impact statement or an environmental assessment (categorical exclusions (§ 1508.4))," 40 C.F.R. § 1507.3(b)(2)(ii), it also mandates that agencies "provide for extraordinary circumstances in which a normally excluded action may have a significant environmental effect." Id. § 1508.4. Here, the NRC unlawfully failed to consider whether any extraordinary circumstances precluded application of the categorical exclusion to Pa'ina Hawaii's license application.

"When an agency decides to proceed with an action in the absence of an EA or EIS, the agency must adequately explain its decision." Alaska Center for the Environment v. U.S. Forest Service, 189 F.3d 851, 859 (9th Cir. 1999). The NRC "cannot avoid its statutory responsibilities under NEPA merely by asserting that an activity it wishes to pursue will have an insignificant effect on the environment." Jones v. Gordon, 792 F.2d 821, 828 (9th Cir. 1986) (quoting The Steamboaters v. FERC, 759 F.2d 1382, 1393 (9th Cir.1985)). "The agency must supply a convincing statement of reasons why potential effects are insignificant." Steamboaters, 759 F.2d

at 1393. It cannot "simply restate[] the exclusion," as the NRC improperly did here. Alaska Center for the Environment, 189 F.3d at 859.

2. Failure to Prepare an Environmental Impact Statement or, At Minimum, an Environmental Assessment.

"[A]n agency adopting a categorical exclusion must "provide for extraordinary circumstances in which a normally excluded action may have a significant environmental effect." California v. Norton, 311 F.3d 1162, 1168 (9th Cir. 2002) (quoting 40 C.F.R. § 1508.4) (emphasis added); see also 10 C.F.R. § 51.22(b). "In determining whether an action requires an EA or EIS or is categorically excluded, federal agencies must not only review the direct impacts of the action, but also analyze indirect and cumulative impacts." Sierra Club v. United States, 255 F. Supp. 2d 1177, 1182 (D. Colo. 2002) (citing 40 C.F.R. §§ 1508.7, 1508.8); see also Thomas v. Peterson, 753 F.2d 754, 759 (9th Cir. 1985). "In addition, NEPA regulations require agencies to consider the impacts of 'connected actions.'" Sierra Club, 255 F. Supp. 2d at 1182 (quoting 40 C.F.R. § 1508.25(a)(1)); see also Thomas, 753 F.2d at 758-59.

When extraordinary circumstances are present, "a categorically excluded action would nevertheless trigger preparation of an EIS or an EA." California, 311 F.3d at 1168. The Ninth Circuit has emphasized that the mere "fact that exceptions may apply is all that is required to prohibit use of the categorical exclusion." Id. at 1177 (emphasis added).

Due to the potential for a range of events – including, but not limited to, mechanical failures, power outages, airplane crashes, hurricanes, or tsunamis – to cause a significant release of radioactive material from the Pa'ina Hawaii irradiator to the environment, "special circumstances" exist, precluding the NRC's use of a categorical exclusion from NEPA's mandate to prepare either an EA or EIS for the proposed license. Resnikoff Dec. ¶ 10 (quoting

10 C.F.R. § 51.22(b)). The aforementioned threats are unique to either the location or design of the proposed irradiator, and, thus, distinguish Pa'ina Hawaii's irradiator from the run-of-the-mill facility for which the NRC promulgated its categorical exclusion.

The significant risks associated with a terrorist attack on an irradiator placed at the hub of Hawai'i's air transportation system and immediately adjacent to military and symbolic targets including Hickam Air Force Base and Pearl Harbor further mandate preparation of an environmental analysis pursuant to NEPA, so that alternatives with fewer risks to the public and the environment can be evaluated. Resnikoff Dec. ¶¶ 10, 21-22, 31-32; Thompson Dec. ¶¶ I-3, VI-1 to -3.[5] While such threats were considered speculative when the NRC adopted its categorical exclusion for irradiators in 1984, following the tragic events of September 11, 2001:

> it can no longer be argued that terrorist attacks of heretofore unimagined scope and sophistication against previously unimaginable targets are not reasonably foreseeable. Indeed, the very fact these terrorist attacks occurred demonstrates that massive and destructive terrorist acts can and do occur and closes the door, at least for the immediate future, on qualitative arguments that such terrorist attacks are always remote and speculative and not reasonably foreseeable.

Duke Cogema Stone & Webster, 54 NRC at 446, rev'd in relevant part, CLI-02-24, 56 N.R.C. 335 (2002).

When, earlier this year, the National Nuclear Security Administration removed a 1,000-curie source of Co-60 from a research irradiator at the University of Hawai'i to prevent its use in a "dirty bomb," the agency announced "[t]he removal of these radiological sources has greatly reduced the chance that radiological materials could get into the wrong hands," and, accordingly, "[t]he University of Hawaii, its surrounding neighbors and the international

[5] Concerned Citizens recognizes the NRC recently concluded it need not consider the impacts of terrorism as part of its NEPA analysis for licensing decisions. Pacific Gas and Electric Co. (Diablo Canyon Power Plant Independent Spent Storage Fuel Installation), CLI-03-1, 57 NRC 1 (2003). With all due respect, Concerned Citizens believes the case, which is currently on appeal to the 9th Circuit, was wrongly decided.

community are safer today as a result of this effort." NNSA Press Release at 1; see also "Radioactive material destroyed," Honolulu Star-Bulletin (Apr. 15, 2005), available at http://starbulletin.com/2005/04/15/news/index11.html (Exh. L). Approval of Pa'ina Hawaii's irradiator would have precisely the opposite result, creating new threats of catastrophic harm to the people of Honolulu by placing in the middle of the airport a source of Co-60 one thousand times greater than the one the NNSA confiscated.

The difficulty of assessing with precision the risk of terrorist attack at Pa'ina Hawaii's proposed facility does not justify the NRC's resort to a categorical exclusion. There can be no question that multiplying the number of radioactive sources potentially available to terrorists by authorizing additional Co-60 irradiators may have a significant, cumulative effect on the human environment. Indeed, the very purpose of the NNSA's Global Threat Reduction Initiative is "to identify, secure, remove and/or facilitate the disposition of vulnerable, high-risk nuclear and other radiological materials around the world as quickly and expeditiously as possible." NNSA News Release at 1; see also id. ("To date, NNSA has recovered more than 10,500 high-risk sealed sources within the United States"). Since licensing additional irradiators in the current geopolitical climate threatens significant harm, these cumulative effects preclude the use of a categorical exclusion here. See 40 C.F.R. § 1508.4 (activities subject to categorical exclusion cannot have significant effect on environment "individually or cumulatively") (emphasis added); see also Thomas, 753 F.2d at 759.

That Pa'ina Hawaii intends to use the irradiator primarily to treat food for human consumption establishes additional special circumstances requiring preparation of an EA or EIS. When the NRC adopted the categorical exclusion for "irradiators" in 1984, it considered only "[t]ypical uses" such as "sterilization or microbiological reduction in medical and

pharmaceutical supplies and insect eradication through sterile male release programs." 49 Fed. Reg. 9352, 9377 (Mar. 12, 1984). It did not consider the potentially harmful effects associated with irradiating food for human consumption. Indeed, at the time the NRC promulgated its categorical exclusion for irradiators, virtually no foods were approved for irradiation in the United States. See Center for Disease Control, "Frequently Asked Questions about Food Irradiation," available at http://www.cdc.gov/ncidod/dbmd/diseaseinfo/foodirradiation.htm (in 1984, only wheat flour and white potatoes approved for irradiation) (Exh. M).

It is clear Pa'ina Hawaii's irradiator "would not be built but for the contemplated" sale of irradiated food for human consumption. Thomas, 753 F.2d at 758. Consequently, the irradiator and the contemplated sale of irradiated food "are inextricably intertwined" and, thus, "are 'connected actions' within the meaning of the CEQ regulations." Id. at 759. Alternatively, the consumption of irradiated food is an indirect impact of the construction and operation of Pa'ina Hawaii's irradiator, which must be considered "[i]n determining whether an action requires an EA or EIS or is categorically excluded." Sierra Club, 255 F. Supp. 2d at 1182; see also 40 C.F.R. § 1508.8.

In the years since the NRC adopted its categorical exclusion for irradiators, numerous scientific studies have raised the alarm about potential adverse affects on human health associated with consumption of irradiated foods. A recently-discovered unique class of radiolytic products that are generated from the irradiation of fat-containing food is 2-alkylcyclobutanone ("2-ACB") with saturated and mono-unsaturated alkyl side chain: 2-decyl-, 2-dodecyl-, 2-dodecenyl-, 2-tetradecyl- and 2-tetradecenyl-cyclobutanone. Au Dec. ¶ 6(b). Studies have confirmed the presence of 2-ACB in irradiated mango and papaya, two types of fruit proposed for processing at the Pa'ina Hawaii facility, should it be approved. Id.

Since 1998, concern regarding health hazards from the consumption of irradiated food has focused on the toxicity of 2-ACB. Id. ¶ 6(c). Recent studies have demonstrated that 2-ACB compounds, which are found exclusively in irradiated dietary fats, may promote colon carcinogenesis in animals, identifying a new area of toxicity that neither the U.S. Food and Drug Administration nor the World Health Organization has yet examined. Id. ¶ 6(d). These studies indicate that consumption of irradiated food containing 2-ACB, such as the fruit Pa'ina Hawaii proposes to process, may increase the risk of humans developing colon cancer. Id. ¶ 6(f).

While the health concerns from consumption of irradiated food have not been resolved conclusively, the data indicate that consumption of irradiated food can cause genotoxic effects and therefore health hazards in the population. Id. ¶ 6(g). Moreover, there may be subpopulations, such as children, who are most susceptible to toxic effects of irradiated food. Id. In the final analysis, the only thing certain about the impacts on human health associated with the consumption of irradiated food, including the papayas, mangos, and other produce proposed to be processed at the Pa'ina Hawaii facility, is that they are the subjects of considerable scientific debate. Id. ¶ 6(h). Both the controversy over the irradiated food Pa'ina Hawaii would produce at its irradiator and the unknown risks involved preclude the NRC's use of a categorical exclusion. California, 311 F.3d at 1177; Jones, 792 F.2d at 826-29; 40 C.F.R. § 1508.27(b)(4), (5).

In light of the foregoing, Concerned Citizens contends that "special circumstances" exist, necessitating the preparation of an EA or EIS, and requests the NRC to so find. 10 C.F.R. § 51.22(b). Alternatively, upon admission as a party to this licensing proceeding, Concerned Citizens intends to petition that application of 10 C.F.R. § 51.22(c)(14)(vii) be waived, or an exception made for this proceeding, due to the aforementioned "special circumstances," 10

C.F.R. § 2.335(b), which include facts unique to Pa‘ina Hawaii’s facility that “were not contemplated in the regulation’s adoption.” CFC Logistics, 60 NRC at 492.

IV. CONCLUSION

For the foregoing reasons, petitioner Concerned Citizens of Honolulu has demonstrated it has standing to participate in this proceeding. Moreover, it has presented a set of admissible areas of concern.

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Respectfully submitted,

DAVID L. HENKIN
Earthjustice
223 South King Street, Suite 400
Honolulu, Hawai‘i 96813
Tel. No.: (808) 599-2436
Fax No. (808) 521-6841
Email: dhenkin@earthjustice.org