PainaHawaiiNPEm Resource

From: Moore, Johari
Sent: Wednesday, January 05, 2011 1:57 PM
To: Torres, RobertoJ; Whitten, Jack
Cc: Clark, Michael; Barkman Marsh, Molly
Subject: Pa'ina EA Supplement: Comment letters received to date
Attachments: ML103470076.pdf; ML110030045.pdf

Attached.

Hearing Identifier: Paina_Hawaii_LLC_License_Application_NonPublic
Email Number: 280

Mail Envelope Properties (C37FF65A70772549ACB9C5B6AD2BA05C0B648631EA)

Subject: Pa'ina EA Supplement: Comment letters received to date
Sent Date: 1/5/2011 1:57:20 PM
Received Date: 1/5/2011 1:57:22 PM
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Created By: Johari.Moore@nrc.gov

Recipients:
"Clark, Michael" <Michael.Clark@nrc.gov>
Tracking Status: None
"Barkman Marsh, Molly" <Molly.BarkmanMarsh@nrc.gov>
Tracking Status: None
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Tracking Status: None
"Whitten, Jack" <Jack.Whitten@nrc.gov>
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Post Office: HQCLSTR02.nrc.gov

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ML110030045.pdf	91544	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

GRAY STAR

12/06/2010
75 FR 75704 (1)

December 6, 2010

Cindy Bladey
Chief, Rules, Announcements, and Directives Branch (RADB)
Div. of Administrative Services
Office of Administration
Mail Stop: TWB5-B01M
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

RECEIVED
2010 DEC -9 AM 10:06
RULES AND DIRECTIVES BRANCH USNRC

RE: **Docket ID NRC 2010-0374**
Docket No. 30-36974
"Draft Supplement to the Final Environmental Assessment Related to the Proposed Pa'ina Hawaii, LLC Underwater Irradiator in Honolulu, Hawaii, December 2010."

Dear Ms Bladey:

Overall, I believe that the NRC has done an excellent job in preparing this supplement per the direction of the ASLB.

The following are my comments on significant and pertinent issues of the Draft EA. I do not believe that my comments will effect your overall conclusions. However, I believe these will help the NRC provide an even more precise Final EA.

1) Section 1.3 Proposed Action:

In the first paragraph, the Draft EA states that the License allows for the irradiation "...of other materials as specifically approved by the NRC on a case-by case basis." This is not technically correct. License number 53-29296-01 states for the authorized use: "For use in a Gray*Star Model Genesis II irradiator for the irradiation of material except explosives, and flammable or corrosive material..."

Other than the restriction of "explosives, and flammable or corrosive material" there are no restrictions in the current license requiring Pa'ina to obtain approval from the NRC on a "case by case basis".

GRAY*STAR, Inc. Mt. Arlington Corporate Center 200 Valley Road Suite 103
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SUNSI Review Complete
Template = ADM-013

E-RIDS = ADM-03
Cadd = J. Moore (JAM7)

2) Section 3.2 Description of Electron-Beam Irradiation Facility:

A) In this section the Draft EA states:

"Ozone is generated as radiation passes through air before reaching the product. Ozone is one of six criteria pollutants identified in the U.S. Environmental Protection Agency's National Ambient Air Quality Standards codified in 40 CFR Part 50. The limit for ozone in air is 0.075 parts per million (ppm). For the x-rays produced by an e-beam, ozone levels of up to 0.7 ppm can be expected (Miller, 2005). Thus, ozone must be removed from the irradiation chamber using a ventilation system. "

However, the Draft EA does not explain the concentrations of ozone released into the atmosphere and does not justify the statement that the "Air Quality" for an Electron-Beam Irradiator as "Small". Nor does the Draft EA provide comparison to the "Cobalt-60 Irradiator".

I believe ozone production from an e-beam irradiator is much greater than that for a comparable production cobalt-60 irradiator. And, that the ozone generated by an underwater irradiator is far less than a panoramic irradiator. I do not believe that the Draft EA has significantly addressed this point. Especially since the Draft EA brought up the subject and specifically say that the concentrations of ozone for an e-beam unit are approximately 10 times over the allowable limit with no discussion of dilution via ventilation and allowable release limits. As an illustration of this point, the Draft EA's e-beam/x-ray unit requires a ventilation system. The Genesis underwater irradiator does not require a ventilation system to maintain legal ozone concentrations per OSHA and EPA.

B) Figure 6 depicts an electron beam accelerator without any indication of its wattage (production output). I believe that this particular accelerator (in x-ray mode) has only a fraction of the production capabilities of a Genesis Irradiator loaded to its licensed capacity. Therefore, this picture might not be a good illustration for comparison. Production output is certainly an important point for comparison.

3) Section 3.3 Environmental Impacts of the E-Beam Irradiator Facility:

The Draft EA states that "an e-beam irradiator would occupy a small percentage of existing industrial space adjacent to Honolulu International Airport." However, the real question is a comparison between the proposed irradiator and an alternate. If one goes by the rough sketch, and assuming the main shielding walls are 10' thick of normal concrete with a density of 2.3 g/cc, there would be some problems with the analysis. [Please note that I am going by major assumptions and do not have detailed drawings of an e-beam/x-ray unit of comparable output to the proposed underwater irradiator. Therefore, I am only speculating on the following issues and am not providing detailed analysis.]

A) The unit, as sketched, would be approximately 70' x 80'. This is much larger than the proposed underwater irradiator. Further, as sketched, there are more space requirements for product handling and support facilities. The licensed property is 119' x 124' with a 4' set back. It would be difficult, if not impossible, to lay out an e-beam/x-ray irradiator (as sketched) within the proposed lot. Even if it is not important to the analysis to determine if the unit could be used at that site, at the very least, from an environmental perspective, the e-beam/x-ray unit would have a much larger "foot print" for the same production capabilities.

B) A very quick analysis indicates that the concrete shielding alone for the e-beam/x-ray unit (as sketched) would weigh around 10,000,000 pounds. Assuming that the area the irradiator occupies is approximately 5,000 square feet, this would lead to a floor loading of around 2,000 pounds per square foot. I am not sure that the existing soil conditions at that site can bear that amount of weight per area. In other words, there might have to be significant modifications (foundations) to the site to support an e-beam/x-ray unit. The Draft EA has not included any analysis of the environment that might be affected assuming significant foundations need to be made to support the unit.

C) The Draft EA basically states that an e-beam unit in x-ray mode "can have a more significant impact with respect to energy consumption than pool-type irradiators that use sealed sources, assuming the same product volume throughput." However, the Draft EA does not identify this factor (electricity consumption) in Table-2.

D) The Draft EA states that during decommissioning of an e-beam irradiator that there is an "...absence of any radioactive or hazardous materials." I am not sure that this is true. Earlier the Draft EA states that the maximum energy for an e-beam unit is 7.5 MeV. This is not true. There are no regulatory limits that I am aware of for an electron beam accelerator. The "7.5 MeV" reference is the maximum energy allowed by the FDA for energy level of electrons prior to being converted to x-rays. This is only specific to food production. It is typical for accelerators to operate at electron energies well above 7.5 MeV. The Draft EA has not addressed what the actual energy levels are for all the products allowed for under Pa'ina's current license assuming that they were to use e-beam or x-ray. More importantly, it has not analyzed any induced activation of accelerator components due to the high energies used in an e-beam/x-ray unit. Therefore it is not clear that there is an "absence of any radioactive" material with respect to an e-beam/x-ray unit.

Please accept the above comments on the Draft EA as constructive. I thank the Commission for the opportunity to make these comments.

Sincerely,

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

PainaHawaiiPEm Resource

From: Michael Jones [mdj@phys.hawaii.edu]
Sent: Friday, December 17, 2010 6:13 PM
To: PainaEA Resource
Subject: Docket ID NRC-2010-0374

17 Dec. 2010

Comments on the Draft Supplement to the Environmental Assessment for the Proposed Pa'ina Irradiator

Docket ID NRC-2010-0374
via E-mail to: PainaEA@nrc.gov

1) The discussion of the impacts of transportation accidents in section 2.4 notes that an accident severe enough to breach the Co-60 container would likely kill the truck driver and could result in loss of shipping papers and inability to see labels on the container.
It is stated the emergency responders "should be familiar with Guide 163 in DOT's 2008 Emergency Response Guidebook" and would thus know to keep people away from possible exposed Co-60 pencils. No information is cited to support this assertion. Because the first people to arrive at the accident may not be familiar with the DOT Guidebook, it seems advisable that each truck shipment be accompanied by an escort vehicle with detailed information about the shipment and people who could direct police and fire personnel or the general public who might be the first to respond to an accident.

2) The alternative sites are very hard to identify in the aerial views in Figures 10-14. The street addresses are indicated in red on the color versions available at the NRC site but it is still hard to precisely identify the locations -- especially in Figure 13. These street addresses are nearly impossible to see in the black-and-white copies. The final EA Supplement should make the locations clear.

3) The discussion of annual crash frequency estimates in section 4.4.2 contains statements which are inconsistent with the stated values.
The value of 2.1 x 10^-4 for the proposed site is claimed to the highest but the value of 3.2 x 10^-4 for the Ualena St. site given in Table 10 and in the text is greater. If the value given for the Ualena St. site is actually less than 2.1 x 10^-4, the stated value should be corrected; if the value is 3.2 x 10^-4, the text should note that this is the largest value.

4) In section 4.5.2 it is stated that the proposed site on Palekona St.
is "outside of the official tsunami evacuation zone" based upon maps that were updated in 2010. It should be noted that this site is close to the tsunami evacuation zone and seems to be within the evacuation zone in the maps in the 2010 Hawaiian Telcom phone directory for Oahu.
To allow readers to judge for themselves, the final EA Supplement should include the map showing the official tsunami evacuation zone and indicate the location of the proposed site on Palekona St.

5) The discussion of impacts from aircraft crashes or tsunamis asserts that impacts would not be significant because the Co-60 would not be dispersed from the bottom of the irradiator pool. Even if one accepts this, such events could deposit debris in the pool or make the area inaccessible for a substantial time. It would be helpful for the final EA Supplement to address how recovery from such events would impact public health and safety.

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Hearing Identifier: Paina_Hawaii_LLC_License_Application_Public
Email Number: 13

Mail Envelope Properties (Pine.LNX.4.64.1012171311320.2863)

Subject: Docket ID NRC-2010-0374
Sent Date: 12/17/2010 6:13:12 PM
Received Date: 12/17/2010 6:13:18 PM
From: Michael Jones

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Recipients:
"PainaEA Resource" <PainaEA@nrc.gov>
Tracking Status: None

Post Office: hepts1.phys.hawaii.edu

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Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
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