

The following table presents the chronology regarding the definition of licensed area and approved D&D activities at HMI after the first ORISE confirmatory survey indicated additional contamination remained at the site.

DATE	COMMUNICATION TYPE / ADAMS ML#	SUMMARY
3/10/89	HMI to NRC ADAMS ML010870132	Application for license
07/05/90	NRC to HMI (ADAMS ML030370258)	Request for Additional Information on license application. States, "NRC only has jurisdiction over processed material" at the site. Asks HMI to provide a map of the property showing areas as undisturbed, disturbed only by mining/dredging, the plant site, and waste/discharge areas ("distinguish between discharges from the current plant and former separation plants"). The letter states, "the NRC will only consider environmental effects in the plant area and areas where discharge or wastes have been and are in the future placed".
7/25/90	HMI to NRC (ADAMS ML030370324)	Response to 7/05 letter. First Definition of Red, Blue, Gray, and Green Areas. Red Areas = "include only the wet mill after the point where table concentrate is produced, the dry mill, and the monazite storage pile" Blue Area = "the current storage for the tailings from the Heritage Phase I operation. . . deposited on top of settling ponds" Gray Area = areas that contained ASARCO's dry mill tailings Green Areas= Represent clean sand and water discharges from current and future operations (Heritage Phase II)

9/27/90	HMI to NRC Not in ADAMS, sent for scanning 7/18/05	<p>Because HMI ceased operation on 8/24/90, operations at the site changed, and so did the license needs. This letter was a response to a 8/3/90 phone conversation on info needed for the license, including jurisdiction. This letter states, "we believe that NRC authority at the Heritage site properly applies to those areas where, until recently, source material was being generated and processed at the site, i.e., the dry mill, portions of the wet mill, and, of course, the monazite storage area." The letter proposes to dispose of the monazite pile, and to decontaminate the plant area and any other areas where source material is present. They also discuss working with the state to resolve concerns in other areas.</p>
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11/30/90	OGC to DNMS ADAMS ML030370215	OGC determination that NRC authority does not extend to the monazite rich product from the earlier processing of sand by ASARCO
01/02/91	NRC to HMI (ADAMS ML030370471)	Transmittal of license. States that "you will be required to decontaminate all areas within the buildings where source material is generated, the monazite pile, and any other areas where source material is used or stored, prior to release for unrestricted use".
3/22/91	NRC to HMI (ADAMS ML030370680)	Clarification of areas requiring decon for release, "the interior of all plant buildings where source material is produced, and the outside monazite storage pile".
4/18/97	NRC to HMI (ADAMS Legacy Library 9704240027) Sent for scanning 7/18/05	<p>Summary of meeting about HMI FSSP. The purpose of the meeting was "to discuss the licensee's final status survey plans for the NRC licensed portions of the site, which include two buildings and a monazite sand pile. . . "Because the licensed portion of the site is impacted by enhanced background from non-NRC licensed material, much of the discussion focused on defining the boundaries of the NRC affected areas. . . you agreed to provide NRC a copy of the Mine Tailings Radiological Assessment Plan (MTRAP). . . and to provide a FSSP. . . further, we agreed to participate in a licensing visit at the HMI site to verify your proposed affected area boundaries".</p> <p>The idea that NRC not terminate license until site meets NJDEP criteria was first documented here.</p> <p>Attendees: HMI, Region I Decommissioning, DWM, NJDEP BER (R.Stern, T.Amidon)</p>
5/9/97	HMI to NRC Not in ADAMS Sent for scanning 7/18/05	Submittal of Mine Tailings Radiological Assessment Plan submitted to NJDEP. Describes processes that occurred at the site, and lists areas that would be of concern to NJDEP: blue area, gray area, and area east of the wet mill where clean Phase II tailings were placed.

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11/10/97	HMI to NRC (ADAMS ML051960549)	<p>Decommissioning Plan: Describes:</p> <ol style="list-style-type: none"> 1) Decommissioning Activities as prescribed by NUREG-5849: remove and dispose of RAM, conduct FSS, and submit report to NRC 2) Release Limits and Background levels: Background: 0.62 pCi/g (U), 0.48 pCi/g (Th) Release Limits: 10 pCi/g (Th, U), 3000 dpm/100cm² (max fxd sfc act.), 1000 dpm/100cm² (avg fxd sfc act), 200 dpm/100cm² (rem sfc act) 3) Affected/Unaffected areas: Outdoor: Unaffected exc. Monazite pile and area immediately surrounding Office Bldg: Unaffected Warehouse: Unaffected Service Bldg: Unaffected Change House: Unaffected Laboratory: Unaffected Wet Mill: Specific Areas Affected Dry Mill: Specific Areas Affected Monazite Pile: Affected + 10m beyond 4) Survey Protocol: Outdoor (Affected)= 100%scan, 1/100m² grid samples 5) Decon Plan: Describes plan for buildings and equipment, and monazite pile. For Monazite Pile: the pile will be packaged and shipped. . . any residual monazite sands on surface soils in the affected areas will be removed in a similar manner.
12/14/98	HMI to NRC Not in ADAMS sent for scanning 7/18/05	Transmittal of map showing NRC areas. . . approximately half of the wet mill, all of the dry mill, and the monazite pile.
11/30/98	HMI to NRC Not in ADAMS sent for scanning 7/18/05	responses to NRC and NJDEP comments on FSSP. One NJDEP comment was on the designation of all outdoor properties (exc. Monazite pile) as "unaffected". The comment mentions a 1991 letter that referred to the area between the mill buildings as being contaminated from spills of monazite sand. The response said that did not happen. This is where an underground pipe is mentioned. This also has the map showing the "NRC Areas" of the site (Wet Mill, Dry Mill, Monazite Pile). The map also showed the lab and dome of the other buildings as "NRC Areas"

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12/14/98	HMI to NRC Not in ADAMS sent for scanning 7/18/05	Corrected transmittal of map from 11//30/98, now showing "NRC areas" of the site (about half of Wet Mill, all of Dry Mill, and all of MonazitePile)
6/24/99	HMI to NRC Not in ADAMS sent for scanning 7/18/05	more responses to NRC questions on FSSP, unrelated to issue of licensed area
7/13/99	HMI to NRC Not in ADAMS sent for scanning 7/18/05	draft project plan for D&D
8/17/99	HMI to NRC Not in ADAMS sent for scanning 7/18/05	Answers to some questions on FSSP. All are process questions, unrelated to licensed area.
9/7/99	NRC to HMI Not in ADAMS sent for scanning 7/18/05	notification that additional info submitted on 11/30/98, 6/24/99, 7/13/99, and 8/17/99 provided the documents necessary for the EA of the FSSP.
10/19/99	NRC toHMI ADAMS ML003721778	transmittal of EA and FONSI for license renewal and amendment, accepting the FSSP. 64 FR 47872-47877
3/23/01	NRC to HMI Summary in ADAMS ml010940409)	Summary of meeting to discuss decommissioning activities. NJDEP in attendance (N.Stanley). A map of affected/unaffected areas was reviewed.
11/28/01	HMI to NRC ADAMS ML021150357	Submission of FSS
4/22/02	ORISE to NRC ADAMS ML021060760	Results of Confirmatory Survey - Soil samples collected within Monazite Pile, and also outside the Monazite Pile, where elevated direct rad levels were identified through surface scans. Most of the samples were greater than 10 pCi/g Th and Uranium.
4/23/02	Meeting [Notice of Meeting at ADAMS ML020990587]	Meeting held to discuss results of ORISE survey (No minutes in docket or in ADAMS). Only hand-notes found in files. Indicate that RI DNMS, NMSS (L.Camper, N.Orlando), HMI, and NJDEP (J. Goodman & P. Gardiner) in attendance. Note mentions L. Camper said HMI responsible for > 0.05% SM.

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6/26/02	HMI to NRC ADAMS ML022030215	Response to ORISE survey. States that HMI is preparing a mass balance and operational history to show that all licensable material has been shipped to IUC, and that remaining material of elevated concentration is the result of pre-licensed activities. They state they will address any remaining licensable material.
8/5/02	HMI to NRC ADAMS ML022210011	Proposed Sampling plan for characterizing potential licensable source material concentrations within the boundaries of the monazite pile and other areas.
11/22/02	HMI to NRC ADAMS ML051990142	<p>Description of site process history. Submitted to show that HMI had already shipped off more soil as licensed material than had been created.</p> <p>States that elevated levels of radionuclides in areas east and south of the dry mill are the result of unlicensed mineral recovery operations before the NRC license was issued. Also state that pockets of licensable materials in these areas had the same origin.</p> <p>States, "Therefore, as the current site owner, HMI proposes to remove these 'pockets' of licensable source material from the site with approval from NRC through an administrative letter or a separate licensing action under HMI's existing license. <u>Any residual monazite concentrations remaining onsite that are below NRC licensable levels will be addressed with the State of New Jersey's Department of Environmental Protection. . . along with all other areas of the HMI site which contain slightly elevated levels of radionuclides resulting from mineral recovery operations.</u>"</p>
12/20/02	HMI to NRC (ADAMS ML030090197)	Results of a characterization survey of the land behind the dry mill building adjacent to and including the footprint of the former monazite pile. Identifies several locations with licensable concentrations of source material (all outside the monazite pile footprint). Includes a map showing the sample locations and includes sample results. 5 of the 13 samples taken (sample locations determined from gamma scan of area) identified licensable quantities.

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12/23/02	NRC to HMI (ADAMS ML023570327)	<p>Transmittal of Inspection Report. Describes the decommissioning activities performed IAW the DP (removal of monazite pile and cleanup of mill buildings). States that ORISE Confirmatory survey showed contamination remained on and around monazite pile area and in mill buildings. States that 11/22/02 process history report describes the additional remediation activities required.</p> <p>Signature: G.Pangburn Concurrences: RI DNMS, ORA</p>
1/17/03	NRC letter to HMI (ADAMS ML030170524)	<p>transmittal of 1/8/03 PEC summary. Requests the following:</p> <ol style="list-style-type: none"> 1) amendment request to remediate additional contaminated soil identified in 11/22/02 Process History and in 12/20/02 Characterization survey 2) Provide a plan to complete wet and dry mill D&D using NRC-accepted methodology. <p>Attendees: RI DNMS, DWM (phone), OE (phone), HMI, NJDEP (P. Gardner, N. Stanley)</p> <p>Signature: G. Pangburn Concurrences: ORA, OE</p>
3/10/03	HMI Letter to NRC (ADAMS ML030830547)	<p>Resultant letter from 1/8/03 EC, in which NRC asked HMI to address 3 issues. They reply:</p> <ol style="list-style-type: none"> 1) Removal of pockets of licensable soil: they argue that the soils below licensable levels are the same as the blue and grey areas. They state they will only remove the licensable soil. <u>They note that all affected areas will have to meet NJDEP standards for developing the area.</u> 2) they attached a plan for final D&D of wet and dry mill buildings. 3) info on pursuit of ASARCO liability. No info.
4/9/03	EP Worksheet (ADAMS ML031000043)	<p>Describes 3/10/03 letter and HMI proposals and determines them to be acceptable. Statement made that NMSS and OGC are considering the licensee criteria re pockets.</p> <p>Attendees: RI DNMS, ORA, OE, NMSS</p>

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5/6/03	HMI letter to NRC (ADAMS ML031320537)	<p>as a result of 1/8/03 EC, a 3/10/03 letter with final D&D activities was proposed. Another EC on 4/9/03 discussed plan and suggested revisions. This letter has the revisions. It affirms:</p> <ol style="list-style-type: none"> 1) HMI will perform D&D of wet and dry mill bldgs IAW 3/10/03 letter 2) <u>Fugitive pockets inside monazite pile area</u> will be excavated so bottom meets BTP. Other elevated soil need not be remediated as it was preexisting, unlicensed material. 3) <u>Fugitive pockets outside monazite pile area will also be remediated</u> so bottom meets BTP.
5/19/03	NRC letter to HMI (ADAMS ML031410319)	<p>Acknowledges that 5/6/03 letter adequately summarizes discussions with NRC staff related to additional planned decommissioning and commitments to complete final site remediation. "This included a determination of release criteria for residual material within and around the monazite pile footprint, removal of fugitive licensed material outside the pile, offsite shipment of material, and demolition of the mill buildings".</p> <p>Signature: R. Bellamy Concurrences: C. Gordon, ORA</p>
6/25/03	HMI to NRC (ADAMS ML031840694)	License renewal application.
6/26/03	HMI to NRC (ADAMS ML031960118)	Report and surveys describing removal of fugitive soil pockets
7/15/03	NRC Transmittal of renewed license to HMI (ADAMS ML031980313)	<p>L.C. 15 States that "All areas in the plant buildings and at the monazite pile having radiation levels above natural background on a map of the licensee's site in letter (9/27/90) or in FSSP (11/10/97) shall be deconned to meet BTP Option 1. May apply for approval of other limits.</p> <p>Signature: C. Gordon Concurrence: R. Bellamy</p>

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12/16/03	EC Summary (ADAMS ML033510055)	<p>describes the NRC approval of HMIs 5/6/03 plan. States that NRC verified through surveys that HMI completed the soil remediation. States that NRC had ORISE perform second confirmatory survey and that additional pockets were identified. Licensee is reviewing options of either 1) address additional pockets or 2) complete dose assessment.</p> <p>Attendees: RI DNMS, ORA, RI OGC, NMSS</p>
1/8/04	NRC letter to HMI (ADAMS ML040130730)	<p>Transmittal of Inspection Report. Contains good description of the agreed-upon D&D actions, and states that the process history report and mass balance were considered in approving the 5/6/03 letter. States that D&D of mill buildings and equipment were performed IAW FSSP unrestricted release guidelines. Also states that ORISE2 indicates the licensee decon commitments were only partially met and that additional pockets of material remain.</p> <p>Signature: R. Bellamy</p>
6/30/04	HMI Letter to NRC (ADAMS ML041910222)	<p>Proposes actions to complete D&D of outside areas.</p> <ol style="list-style-type: none"> 1) Includes a proposed final NRC site boundary, and states that any <u>remaining fugitive licensable soil material within that boundary will be removed</u>. The boundary includes the ORISE-pockets, the mill pads, the former monazite pile footprint, and a buffer zone. 2) Proposes disposing of stockpiled sands from deconning wet and dry mill buildings as blue/grey waste

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7/21/04	NRC TAR re 6/30/04 Letter (ADAMS ML042040437)	<p>TAR sent to DWM to review :</p> <ol style="list-style-type: none"> 1) the proposed red area ("buffer zone") 2) the disposition of the stockpiled material <p>TAR states:</p> <ol style="list-style-type: none"> 1) "The proposed buffer zone is an extension of the red area, into which HMI will identify remaining licensable (>116 pCi/g thorium) fugitive material. Soil samples will be taken at these locations, and any fugitive material found will be remediated to meet soil concentration guidelines in the DP. Recommendation to approve the boundary is consistent with the 11/30/90 [Fonner memo], to not regulate the blue and gray areas, and HMI's commitment [5/6/03] to remove subsurface pockets of fugitive material. From the 2003 ORISE survey and the followup survey by HMI's contractor in 2004, it appears that any fugitive material remaining in the licensed (red) area has been identified and is included within the proposed buffer zone" 2) After mill demolition, small amounts of concentrated material remained in the red area within building infrastructures, which was washed off and combined with material from structures in unaffected areas. 95% of the sand was not part of the unit that concentrated monazite during active operations, and the material composition is similar to blue/gray area material (<0.05% Th/U). Since stockpiled sands do not exceed licensable source material levels, HMI asserts no further action is necessary under NRC license and the material should be addressed under NJDEP soil remediation standards.

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8/30/04	TAR response (ADAMS ML042320200)	<p>1) "DCD staff concurs with the concept of formally delineating the area within the HMI site that would be subject to NRC jurisdiction for the purpose of decommissioning." The response states, however that the action should be coordinated with New Jersey, as it would impact the blue and gray area boundaries. Also states it is unclear if this affects the description of the site in the license and requires a hearing. Also recommends obtaining info on the method and instrument used to develop red area map. Concludes with "Subject to DNMS' determination regarding the need for a license amendment, if HMI provides this detail, DCD has concluded that HMI's proposal to formally delineate the area within the HMI site that would be subject to NRC jurisdiction for the purpose of decommissioning, should be approved."</p> <p>2) Concludes that the stockpiled material "is licensed material with low concentrations of source material from licensed activities". And that it "should be managed in the same manner as other residual radioactivity that was associated with licensed operations at the site" (i.e. disposed of as LLRW)</p> <p>Concurrences: NMSS, OGC (M. Schwartz)</p>
11/17/04	NRC letter to HMI (ADAMS ML043240049)	<p>Letter forwarding TAR results. States that:</p> <p>1) Buffer zone was approved. "Any material located within this bounded area, even if outside the footprint of the former monazite pile, that contains a concentration of thorium in excess of the unimportant quantity limits. . . must be remediated to below 10 pCi/g. However, any material within the bounded area that is less than 116 pCi/g of thorium will be treated as an unimportant quantity which does not require further remediation".</p> <p>2) Stockpiled waste must be disposed as licensed material.</p> <p>Signature: R. Bellamy Concurrences: RI DNMS, RI OGC</p>