



Former NAS Brunswick



Restoration Advisory Board Meeting 14 June 2012

Municipal Meeting Room
Brunswick Station
16 Station Avenue, 2nd Floor
Brunswick, Maine
7:00 PM

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Introductions



- **RAB Co-Chairs:**

- Ms. Suzanne L. Johnson, Esq., Town of Brunswick Representative
- Mr. Paul Burgio, BRAC Environmental Coordinator, Navy BRAC Program Management Office

- **RAB Members:**

- Mr. Todd Bober, P.E., Remedial Project Manager, Navy
- Mr. Michael Daly, Remedial Project Manager, United States Environmental Protection Agency (EPA)
- Ms. Claudia Sait, Remedial Project Manager, Maine Department of Environmental Protection (MEDEP)
- Mr. Tom Brubaker, Midcoast Regional Redevelopment Authority (MRRA)



Introductions



- **RAB Members (continued):**

- The honorable Ed Benedikt, Project Manager - EPA Grant to Brunswick Area Citizens for a Safe Environment (BACSE) and BACSE President
- Mr. David Chipman, PhD, Town of Harpswell, Maine
- Mr. Scott Libby, Town of Topsham, Maine
- Ms. Carol Warren, Esq., BACSE
- Ms. Carolyn Lepage, C.G., Lepage Environmental, BACSE

- **Other RAB Attendees:**

- Mr. Chris Evans, C.G., Project Geologist, MEDEP
- Ms. Pamela Harting-Barrat, Community Relations Specialist, EPA



Meeting Agenda



Welcome!

- **Introductions**
 - Old Business
 - New Business (Ground Rules - Suzanne and Paul)
- **Historical Radiological Assessment (HRA) Process**
 - HRA Development
 - HRA Results
 - Planned Document Development
- **Planned Radiological Assessment Activities**
 - Buildings 200/250/Hangar 4
- **Questions**



Former NAS Brunswick



HISTORICAL RADIOLOGICAL ASSESSMENT (HRA) FORMER NAVAL AIR STATION BRUNSWICK BRUNSWICK, MAINE

Thursday, June 14, 2012





Presentation Overview



- Objective
- HRA Background
- HRA Key Terminology
- HRA Scope (time frame, location)
- HRA Research
- Summary of radiological activities on base
- HRA Findings
- HRA Conclusions
- Path Forward



Presentation Objectives



1. Summarize research activities
2. Present findings/conclusions from the Draft HRA
3. Describe the path forward



MARSSIM

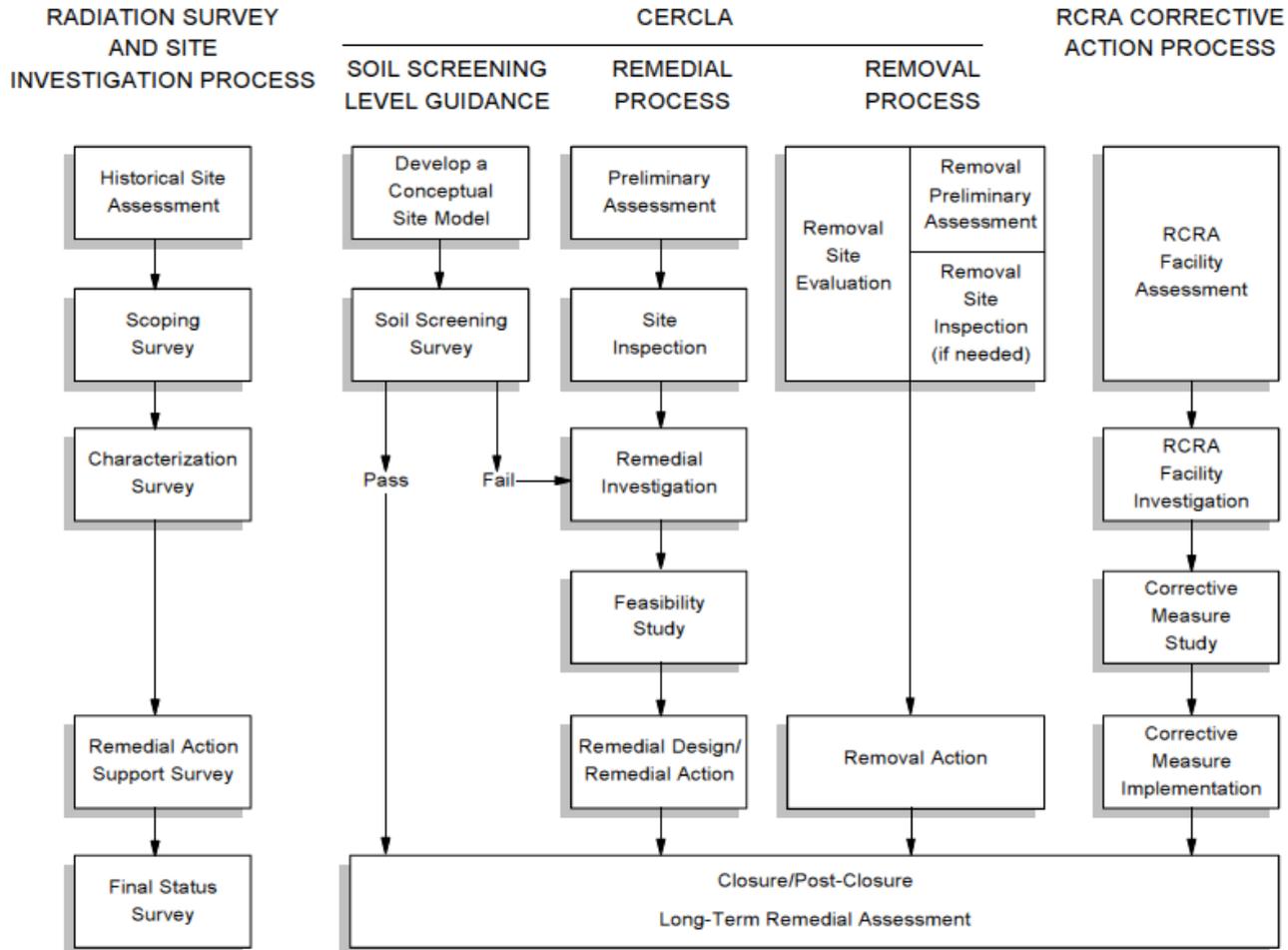


The Department of Defense (DOD), the Nuclear Regulatory Commission (NRC), the Environmental Protection Agency (EPA) and the Department of Energy (DOE) collaborated to prepare site radiological assessment guidelines

- Structured after the CERCLA process
- Contained in the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)
- MARSSIM was issued in December 1997 and revised in August 2000 and June 2001
- Available to the public at <http://www.epa.gov/radiation/marssim/obtain.html>



MARSSIM vs. CERCLA





HRA Background



What is an HRA:

- Documents past radiological activities
- Provides a basis for investigating the possible presence and extent of residual radioactive material or contamination
- Assesses past radiological investigations
- Determines sites as “*impacted*” and “*nonimpacted*”
- Provides *recommended actions* for impacted sites



Key Terminology



Impacted versus nonimpacted

- A site is considered *impacted* if it is known or there is a possibility that radioactive materials were used, stored, or disposed there
- A site is considered *nonimpacted* only if there is no reasonable possibility that radioactive materials were used, stored, or disposed there
- *Impacted* does not imply that the site is contaminated, only that the potential exists



Key Terminology, Cont'd



Final Status Survey - Survey conducted to verify that the site complies with release criteria

- May follow remediation or verify past radiological investigations

Scoping Survey - Survey to identify radionuclide contaminants, relative radionuclide ratios and general radiation levels, and extent of contamination. These surveys usually include minimal surface scans, sampling, and dose rate assessments.

No Further Action - An impacted site has been reviewed by the Navy and regulators and confirmed to meet unrestricted release criteria



Key Terminology, Cont'd



Radionuclide

- A radionuclide is an atom with an unstable nucleus
- A radionuclide undergoes radioactive decay by emitting a gamma ray(s) and/or subatomic particles (alpha and/or beta particles)
- Radionuclides are often referred to by chemists and biologists as radioactive isotopes or radioisotopes
- Radionuclides may occur naturally, but can also be artificially produced.



HRA Scope

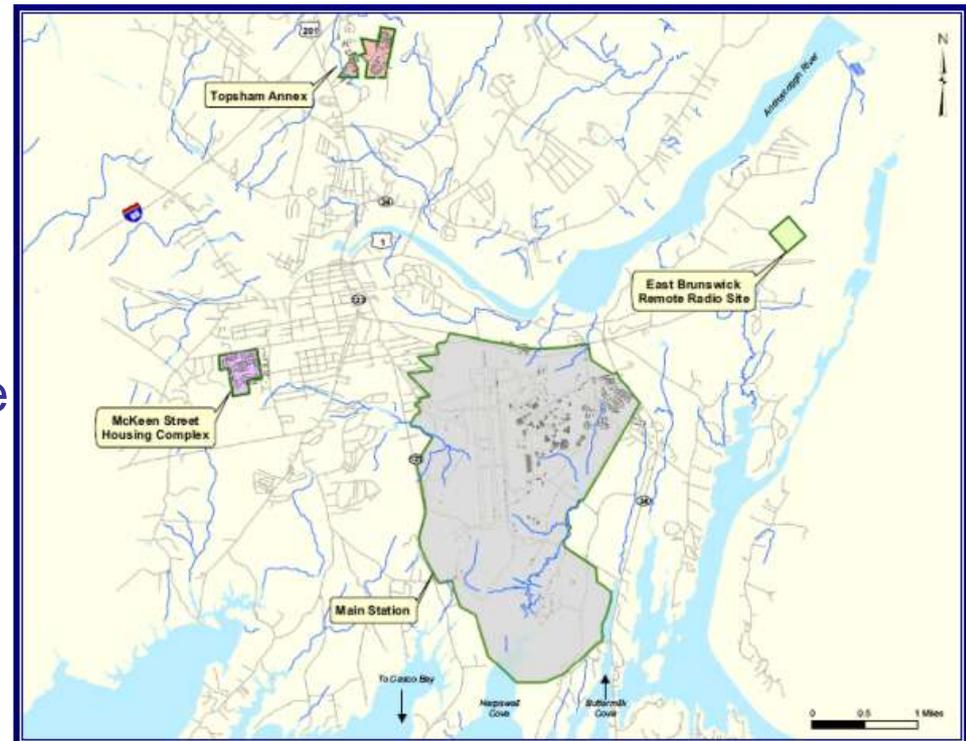


Time frame of study:

- 1943 to 2011: 68 years of historical radiological activities

Bounds of study:

- Main Station
- McKeen Street Housing Complex
- Former East Brunswick Remote Transmitter Site
- Topsham Annex
- Sabino Hill Rake Station No. 1
- Small Point Rake Station No. 2





HRA Research



- The HRA was prepared from:
 - Historical archive and record searches
 - Site inspections at locations where radioactive materials may have been used, stored, or disposed of
 - Interviews with people who knew of radiological activities at the former NAS Brunswick
- Several thousand records were reviewed and those pertinent were compiled into a project database
- HRA was developed based on a compilation of information found during the research process



HRA Research



Record searches at the following archives:

- NAS Brunswick, ME
- NARA, College Park, MD
- Naval Historical Center, Washington, DC
- NARA, Boston, MA
- NARA, Philadelphia, PA
- RASO, Yorktown, VA
- Pejepscot Historical Society, Brunswick, ME
- Curtis Memorial Library, Brunswick, ME



NARA, College Park, MD

NARA: National Archives and Records Administration

NWS: Naval Weapons Station

RASO: Navy Radiological Affairs Support Office



HRA Research



Solicited Interviews

- Press Release
- Fact Sheets
 - Published in the Times Record
 - Posted on VPNAVY.com website
- Maintained Toll-free Hotline
- Maintained dedicated e-mail address

Interviews

- Three individuals were interviewed
 - Two individuals had served tours at NASB and later were employed as Navy civilian employees
 - One individual was contacted after an unsolicited letter sent to the Base Environmental Division
- Interviews included in HRA
- No leads were developed from the toll free number or the dedicated e-mail address



Radiological Activities Summary

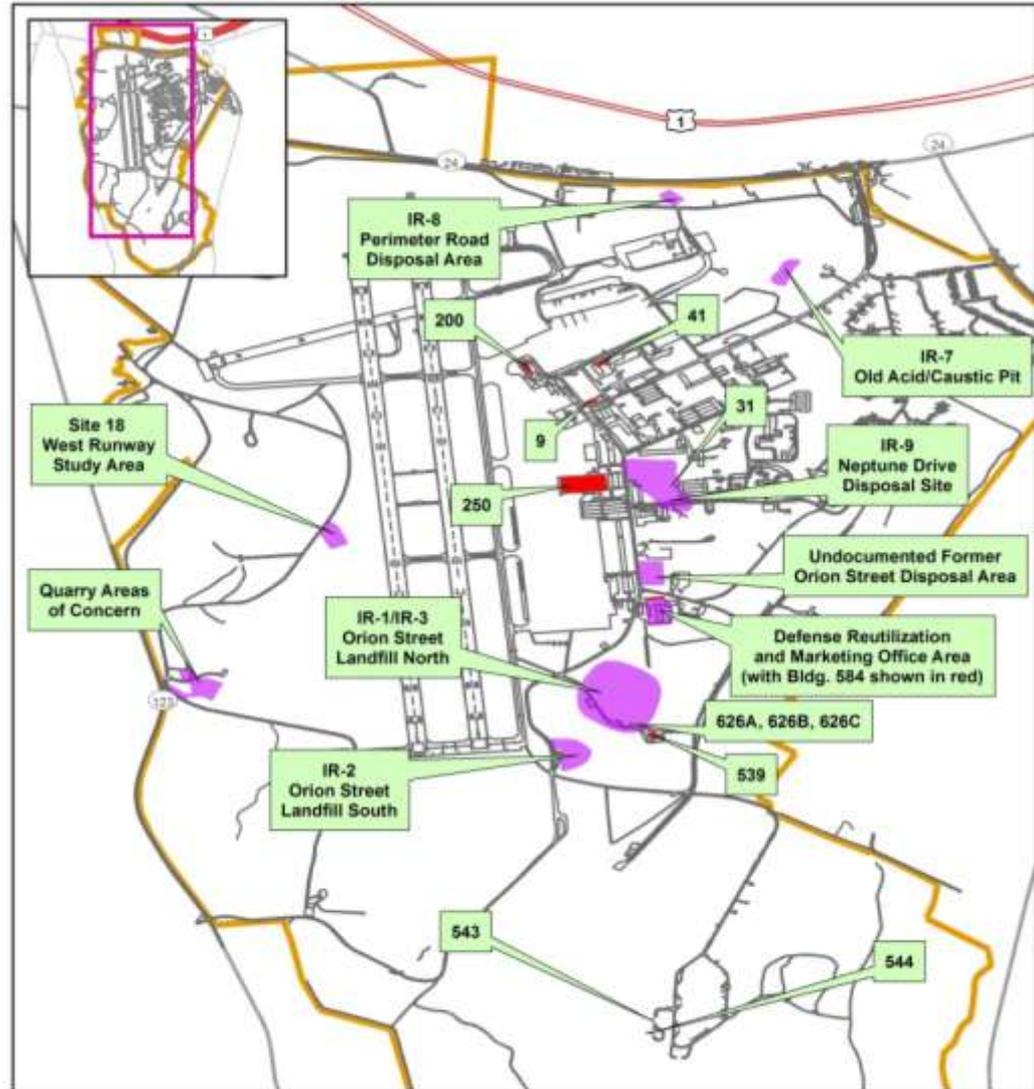


Past radiological operations:

- Repair, use, and disposal of radioluminescent commodity items (e.g., dials, gauges and personnel markers)
- Handling, storage, repair, and disposal of aircraft components containing radioactive material (e.g., depleted uranium (DU) counterweights, ice detector probes)
- Storage and handling of commodity items containing radioactive material (e.g. exit signs, smoke detectors)
- On-site disposal of radioactive materials
- Handling and disposal of radioactive materials by shipment to off-site vendors or waste disposal sites
- Storage and maintenance of ammunition and weapons

Impacted Facilities and Sites

- A total of 18 facilities or sites were determined to be impacted
- These consisted of 9 facilities and 9 outdoor sites
- Surveys began on June 4, 2012
- The Navy is currently budgeting to accomplish additional surveys on impacted sites





Building 9



- This approximately 8,900 ft² building was originally built in 1943 as a laundry facility and later housed the Electronic and Ordnance Shop (1950s - 1960s) and the Patrol Squadron Special Unit (VPU) (1970s-1980s)
- As an Electronics and Ordnance Shop, this building was used in the maintenance and repair of electronic components
- The building was impacted because aircraft components, electronics, and instrumentation that potentially contained radioactive material were stored and maintained in the building

Recommended Action: **scoping survey** of building structure and drains (if present)





Building 41



- This approximately 10,500 ft² single story structure with below ground utility area was constructed prior to 1944
- A portion of the building housed the parachute maintenance operations until those activities were moved to Building 250 in the 1980s
- This building was impacted because of the maintenance of survival vests which were equipped with compasses and personnel markers containing radioluminescent material



Recommended Action: **scoping survey** of building structure and drains (if present)



Building 31



- The Incinerator Building (Building 31) was built sometime before 1946. The square footage is unknown and the building was demolished sometime before 1954 and is currently a vacant lot
- Used prior to the station's deactivation in 1946 to incinerate solid hazardous waste for burial at adjacent dump sites (possibly Sites 2 and 9)
- This building/site was impacted because of the potential incineration of components containing radioluminescent paint

Recommended Action: Assess effectiveness of institutional controls for radiological issues and conduct **scoping** surveys of the building footprint (soils)





Building 200



- Building 200 is a 22,400 ft² structure built in 1952 to house Air Operations and replace the original Old Control Tower
- 1976 radiological surveys confirmed the presence of transferrable contamination on Ground Control Approach (GCA) systems
- The Ground Support Electronics Maintenance Shop located in Building 200 repaired and maintained electronics known to contain radioactive material
- Building 200 was impacted due to the known past presence of radioactive material associated with historical operations

Recommended Action: **scoping survey** of building structure and drains (if present)





Hangar 4/Bldg. 250



- Hangar 4 (Building 250) is a 184,400 ft² steel structure on a concrete slab originally constructed in 1956
- Activities included the maintenance and storage of aircraft containing components with radioluminescent coating or parts, avionics equipment with electron tubes containing radioactive material and Depleted Uranium counterweights
- Hangar 4 and Building 250 were impacted due to the possible presence of radioactive material associated with historical operations

Recommended Action: **scoping survey** of building structure and drains (if present)





Building 539



- This approximately 10,100 ft² single-story metal structure was originally built in 1958, with an addition built in the 1960s
- The facility housed the Advanced Undersea Weapons (AUW) Shop
- Historical records indicate storage of and maintenance of weapons that potentially contained radioactive material
- Building 539 was impacted due to the potential presence of radioactive material contained in squadron weapons

Recommended Action: **scoping survey** of building structure and drains (if present)





Building 584/DRMO



- The DRMO Area consists of Building 584 (DRMO) and the adjacent DRMO yard. Building 584 was built in 1965. The square footage of the building is 7,200 ft²
- The DRMO yard was a paved, fenced enclosure that is approximately 84,000 ft²
- The DRMO coordinated sale or disposal for the Navy's surplus materials and hazardous waste.
- Building 584 and the DRMO laydown yard were impacted due to the handling and storage of materials that may have contained radioactive material

Recommended Action: **scoping survey** of building structure and drains (if present)





Building 543 & 544



- Building 543 is a 1,200 ft² weapons magazine and Building 544 is a 2,300 ft² weapons magazine that were built in 1958
- The magazines have a history of use as AUW facilities and would likely have stored the weapons inventory
- Building 543 was impacted due to the potential for weapons containing radioactive material having been stored there

Recommended Action: **scoping survey** of building structure





Building 626A, B & C



- This structure was built in 1973 and houses three 3,200-square-foot weapons magazines
- The magazines were constructed in the AUW compound near the AUW shop and would likely have stored the weapons inventory
- Buildings 626A, B and C are impacted due to the potential for weapons containing radioactive material having been stored there

Recommended Action: **scoping survey** of building structure





Quarry Area



- The Quarry Area of Concern is an approximately four acre area located southwest of the runways at the NAS Brunswick western boundary, adjacent to Maine State Route 123
- The site was used as a rock quarry in the 1940s and 1950s
- A significant amount of debris, including partially buried scrap metal, tires, and concrete, was observed during site reconnaissance (2007-2010)
- The Quarry Area was impacted due to the potential for items containing radioactive material being disposed of within its boundaries

Recommended Action: **scoping survey** of the area





IR Site 2



- The Orion Street Landfill (South) (IR Site 2) is an approximately three acre area located in the vicinity of the southern extent of the main runways within the restricted Weapons Compound Area
- The site was used as the station's primary landfill for domestic waste, hazardous materials, aircraft parts, and construction debris during a portion of the years of station operations between 1945 and 1955
- The Site was impacted due to the potential for items containing radioactive material being disposed of within its boundaries

Recommended Action: **scoping survey** of the area





IR Sites 1 & 3



- Hazardous Waste Burial Area (IR Sites 1 and 3) is located immediately north of Building 642
- IR Sites 1 and 3 were combined for remediation due to their close proximity, resulting in an approximately 10 acre which is estimated to contain 300,000 yd³ of waste
- Sites 1 and 3 operated as landfills between 1955 and 1975
- Aircraft parts were routinely disposed of in base landfills
- The Sites were impacted due to the potential for items containing radioactive material being disposed of within its boundaries

Recommended Action: **scoping survey** of the area





IR Site 7



- The Old Acid/Caustic Pit Area (IR Site 7) is an approximately 1.4 acre flat open clearing located in the northeast portion of the installation and is believed to have operated from 1952 to 1969
- In addition to pit operations, the site was also used by the DRMO Facility as an outdoor storage area and equipment lay-down area
- This DRMO storage and laydown areas are believed to have been used for the storage of equipment and airplane components which could have contained radioactive material
- The Site is impacted due to the potential for items containing radioactive material being stored within its boundaries





IR Site 7, Cont'd



Recommended Action: Review (and revise as necessary) the soil and groundwater restrictions for applicability to radiological issues, add radiological analysis to groundwater sampling, and conduct **scoping** surveys of the area



IR Site 8



- The Perimeter Road Disposal Site (IR Site 8) is an approximately 1 acre located along the northern boundary of the installation (south of Bath Road), in a wooded area adjacent to Building 634
- The site was believed to have been used to dispose of demolition debris (as well as construction material and solvents) from 1964 to 1974
- The Site is impacted due to the potential for items containing radioactive material being disposed of within its boundaries



Recommended Action: **scoping survey** of the area



IR Site 9



- The Neptune Drive Disposal Area (IR Site 9) is a partially remediated hazardous waste disposal area occupying approximately 20 acres in the central portion of the base
- Between 1943 and possibly 1953, solid hazardous waste was reportedly burned in the adjacent incinerator and ashes were disposed of in trenches at Site 9
- Since there was the potential that the debris that was incinerated contained radioactive material, there is a possibility that the ash may also have been radiologically contaminated
- The Site was impacted due to the potential for items containing radioactive material being disposed of within its boundaries





IR Site 9, Cont'd



Recommended Action: Review (and revise as necessary), the Land Use Control Implementation Plan for applicability to radiological issues and conduct **scoping** surveys of the area



IR Site 18



- The West Runway Site (IR Site 18) is an approximately 0.8 acre area located just to the west of the outbound runway and is partially included in the Former Munitions Bunkers area
- During excavation of test pits in 1993, fill material and metallic debris were uncovered and removed
- Because it is unknown what type of debris was disposed of in this area, there is a possibility that radiologically contaminated debris, radioluminescent devices, and electronics containing radioisotopes could have been disposed at this site
- The Site was impacted due to the potential for items containing radioactive material being disposed of within its boundaries



Recommended Action: **scoping survey** of the area



Undocumented Orion Street Disposal Area



- The Undocumented Former Orion Street Disposal Area is located at the corner of Orion Street and Merriconeag Drive and the exact size of the area is unknown
- The site was identified by a former Navy electronics technician as an open disposal area where the GEMD disposed of defective electronics components, including electron tubes containing radioactive material
- The Undocumented Orion Street Disposal Area is impacted due to the potential for items containing radioactive material being disposed of within its boundaries

Recommended Action: **scoping survey** of the area





Summary of Findings



- There is a low potential for residual radioactive contamination at the 18 impacted sites
- Scoping surveys are recommended for the 18 impacted sites
- No historical information about radiological operations or previous radiological surveys at any of the impacted sites presents a level of concern that would require an emergency action
- High-level contamination has not been found, nor is the potential considered a possibility in the HRA
- None of the impacted sites require restricted access due to known levels of undisturbed radioactive contamination
- No evidence of potential airborne contamination has been found
- No pathway for contamination to migrate off base has been identified



Conclusion



The overall conclusion of the HRA

- Although there is potential residual radioactive contamination at all 18 impacted sites, contamination, if present, would be expected only at low levels



Path Forward



- Timeline
 - Scoping surveys scheduled to start at Buildings 200 and 250 and Hangar 4 in June 2012
 - These surveys are expected to take 6 weeks to complete
 - Results expected 1-6 months after completion of surveys



Questions?



Point of Contact

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