

**Planning and Response to Emergency Events
2008-2009**

**Massachusetts Department of Public
Bureau of Environmental Health**

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A. Introduction: Environmental Health and Emergency Response

Both major disasters and smaller-scale emergency events commonly require the analysis of immediate, or long-term environmental factors that pose threats to victims and local populations. The Bureau of Environmental Health's response actions to emergency events evaluate and illustrate the impact of environmental factors that inform medical, public safety and other public health and environmental responders. BEH response actions include analyzing the exposure pathway of a chemical or radioactive material following an incident, assessing the safety of food, water and air impacted by a contaminant or terrorist event, or determining the indoor or ambient air conditions affecting a population. The consequences of a given emergency may also require the long term surveillance of affected individuals and mapping/visualization of the location of sensitive populations and licensed facilities such as recreational camps and food manufacturing installations affected by a chemical release or similar event. BEH programs also play a key role in ascertaining the cause of and resolution to events such as foodborne illness outbreaks, and preventing and determining the potential impact of nuclear power plant accidents on populations. These capabilities and response actions form a critical foundation for all phases of emergency response, from the initial assessment of a release or contamination event, to long term follow up and recovery with federal, state and local health responders.

The following summarizes BEH emergency response actions from January 2008 through the first quarter of 2009. In addition, this report also provides information on planning efforts, emergency response projects funded through federal response partners, and training efforts for local public health and medical responders.

B. 2008-2009 Emergency Response Actions by BEH Programs

a. January – March 2008

Local Incidents

Belchertown - Trailer Park: March 25, 2008, BEH was notified of a 52 site trailer park with no water supply. The original water source, a well, qualified as a public water supply under the Department of Environmental Protection (DEP). The Community Sanitation Program (CSP) and C. Kaniecki consulted with DEP on the case.

Boston - Liberty Mutual Water Supply Incident: BEH was notified on February 6, 2008 of a problem with the water supply at Liberty Mutual in Boston and also at the Grill 23, due to a cross connection between the cooling system in the building and the water supply. The Food Protection Program (FPP) and Environmental Toxicology Program (ETP) worked with Boston Inspectional Services Division to address the case.

Fairhaven – Fairhaven High School Mercury Incident: On January 19, 2008, BEH was notified of a mercury incident involving students at the Fairhaven High School, and subsequently

reported the incident to EPB. BEH coordinated efforts with the Department of Fire Services/Hazardous Materials Division (DFS/Hazmat), DEP and the Hinton State Laboratory. Testing for mercury was provided to 20 students. A report on the response was submitted to the Agency for Toxic Substances and Disease Registry (ATSDR).

Hardwick - School Water Supply: BEH responded to a DEP Declaration of Emergency regarding the water supply at a school in Hardwick on February 28, 2008. EPB was notified.

Lunenburg - Water Supply: The Fairlane Mobile Home Park was required to notify users of a DEP-imposed boil water order due to high total coliform levels and *E. coli* on February 26, 2008. EPB was notified of the order.

Montague - Mercury Ingestion Incident: In February, 2008, BEH/FPP and ETP staff were notified of an incident reportedly involving the ingestion of mercury-contaminated broccoli by a young child in Montague, MA. EPB was notified of the incident. BEH/ETP interpreted blood and urine mercury test results for the child to assess exposure levels. BEH/FPP and IAQ programs collaborated with DEP and other partners on the investigation of the food facilities involved.

Millville - Elementary School, Tier I Incident: BEH was notified on January 7, 2008 by DFS regarding a Tier I response at the Millville Elementary School. EPB was notified, and BEH Indoor Air Quality Program (IAQ) and regional staff responded with respect to air quality complaints at the school affecting the 350-400 students at the site. Students were not allowed to enter the school that day until problems with the furnace and flood drains had been corrected.

Montague - Mercury Incident: BEH responded to an incident involving the release of mercury in the basement of a building holding both a restaurant and residential space, on January 4, 2008. EPB was notified. BEH/FPP and IAQ programs worked with the local health agent to assess exposure factors and notification, and collaborated with DEP.

Shrewsbury - Whittier Farms, Listeria monocytogenes Outbreak Response: In January 2008, FPP completed its response to an investigation of Whittier Farms in Shrewsbury, MA, regarding cases of *L. monocytogenes* linked to environmental conditions in the pasteurization facility that resulted in 5 cases and 4 deaths. The DPH Foodborne Illness Working Group coordinated the investigation and response activities. The response concluded with a final letter to the owner of the facility regarding existing violations and a follow-up inspection, and approval for ongoing shipment of bulk milk to other processing facilities for further use.

South Hadley - Residential Laboratory Response: On February 16, 2008, BEH was notified of a DHS Hazmat response to a possible methamphetamine laboratory. EPB was notified. Local fire, police, DEP, Federal Bureau of Investigation (FBI) and Alcohol, Tobacco and Firearms (ATF) were also involved. The home involved was evacuated under an emergency order. In addition to the materials for methamphetamine processing, precursors for explosives and explosive materials were also found. Mike Feeney, BEH/IAQ, Meg Blanchet with ETP and other BEH staff consulted with David Ladd from DFS and staff from DEP to determine if any indoor contamination or human exposure had occurred. Charlie Kaniecki followed up with the South

Hadley Board of Health to address apparent hoarding conditions and potential violations of the housing code at the site.

Wilkinsonville - Water Event: BEH/FPP was notified of problems with bacterial contamination of the Sutton water supply that affected 2700 persons on January 9, 2008. EPB was subsequently notified.

Facility/Licensee Responses

Lahey Clinic Foundation: RCP's Nuclear Incident Advisory Team (NIAT) responded to an incident involving the loss of 2 mCi in 5 sealed sources following surgery, on January 16, 2008.

North Shore Cancer Center: On January 16, 2008, RCP/NIAT responded to incident involving administration of improper radiation dose (to incorrect site) in clinic.

QSA Global, Inc.: RCP/NIAT responded on February 22, 2008 to report that two Iridium-192 sources were lost on the way to Hong Kong (later found in New Jersey). EPB was notified.

Avery Dennison: RCP/NIAT responded to report of loss of two Polonium-210 sources in transport on February 26, 2008. EPB was notified.

Roxbury Transfer Station: Radiation source reported in trash at transfer station February 26, 2008.

Boston University: On February 29, 2008, RCP/NIAT responded to report of a leaking cesium-137 (Cs-137) reported inside a Beckman liquid scintillation counter. Source contained about 18 uCi. Liquid Scintillation counter involved was decommissioned.

Other

Hydrazine-Satellite Incident: BEH/ETP staff worked with staff from Emergency Preparedness Bureau (EPB) and DFS-Hazmat with respect to planning for a potential crash of a satellite holding both hydrazine and beryllium on February 20, 2008.

b. April – June 2008

Local Incidents

Amesbury - Radioactive Materials Incident: On June 18, 2008, RCP/NIAT was notified at approximately 8:45 a.m. through DEP of an accident that had occurred earlier (around 4:30 a.m.) involving a transport of radioactive materials. A truck containing two radioactive materials for medical usage (iodine-131 and technetium-99m) from Cardinal Health Nuclear Pharmacy, the licensee, rolled onto a median strip. BEH staff from CSP and RCP were notified immediately after the DEP call, and EPB was also notified. However, the road was opened without RCP's authority 1.5 hours after the notification. The after action meeting identified numerous problems

with the response including 1) failure to alert/notify RCP/NIAT when radioactive substances were identified in the vehicle; 2) problems with incident command system (ICS) management of the site including observance of a perimeter boundary; 3) original classification of the response as a hazardous materials event; 4) Incident commander lack of awareness of RCP/NIAT role; 5) improper site assessment for radioactive materials and other issues. Ongoing MEMA training for transportation incidents was recommended.

Boston - Hook Lobster Fire: FPP responded to a fire at the J.G. Hook Lobster facility in Boston on June 2, 2008.

Lawrence - Train Derailment: BEH staff supported response efforts related to the derailment of a train carrying sodium chlorate (NaClO_3 or trade name "chlorate 1495") in Lawrence on May 9, 2008.

Marlborough - Water Supply Response: On April 16, 2008, BEH /ETP responded to a notification by DEP of contamination of the Millham Reservoir, a City of Marlborough water supply, with 3 million gallons of sewage. EPB was notified.

Plymouth - White Island Pond Blue-Green Algae: BEH /ETP was notified of and responded to a toxic algal bloom at White Island Pond in Plymouth on May 8, 2008. Testing and an evaluation of the water body was carried out.

Waltham - Resident, Elevated Blood Mercury: BEH/ETP responded to a phone report of a resident in Waltham, MA related to elevated blood mercury and health effects. Staff provided an interpretation of the information related to fish consumption and referred caller to a list of environmental/occupational physicians.

Facility/Licensee Responses

QSA Global, Inc: RCP/NIAT responded on May 12, 2008 to a report of the loss of a shipment containing an Iridium-192 source with an activity of 5.52 TBq (149.2 Ci); source was subsequently recovered. EPB was notified.

University of Massachusetts, Lowell: RCP/NIAT responded on May 22, 2008 to a report of a leak of Cesium-137.

Covanta, Rochester: Waste from Covanta set off radiation alarms at a recycling center in Greenfield, MA on May 28, 2008.

Alpha Analytical Labs: June 2, 2008, RCP/NIAT responded to a report of two electron capture detectors (ECDs), containing 15 mCi of Ni-63 each, leaking.

Other

Multi-state Tomato Outbreak: FPP participated in a multi-state outbreak of Salmonella St. Paul initially associated with tomatoes. 12 cases were reported in Massachusetts on June 4, 2008.

Surf Clam Product, Paralytic Shellfish Poisoning: June 19, 2008 FPP responded to report that surf clams harvested by a fishing boat from open federal waters were found to contain PSP toxin.

c. July – September 2008

Local Incidents

Arlington - Spy Pond Blue-Green Algae: BEH Environmental Toxicology Program responded to a possible blue-green algae bloom at Spy Pond in Arlington on August 26, 2008.

Bernardston - Water Supply: A boil water order was required on September 19, 2008 due to a high total coliform level. EPB was notified.

Dudley - Water Incident: On August 15, 2008, the Town of Dudley issued a boil water notice due to high total coliform and *E.coli* levels in the water supply. BEH/ETP responded to DEP notification of the incident. EPB was notified.

Fall River - Water Emergency: BEH/ETP responded to notification on July 14, 2008 of a water emergency due to *E. coli* in Fall River. EPB was notified.

Halifax - West Monponsett Pond Blue-Green Algae Incident: BEH /ETP responded to a blue-green algae bloom at West Monponsett Pond in Halifax on July 16, 2008. A subsequent visit to East Monponsett Pond was carried out on August 15, 2008.

Hamilton - Perchlorate in Water: Perchlorate levels above EPA maximum contaminant levels MCL's were found in the Hamilton water supply and BEH notified on August 29, 2008. BEH/FPP and ETP, collaborated with local public health. EPB was notified.

Huntington - Water District: An advisory was required of the Huntington supplier based on high perchlorate levels on September 22, 2008.

Leicester - Water Supply: Staffordshire Properties were required to issue an advisory regarding perchlorate in the water supply on October 10, 2008.

Milford - Water Quality, Dana Farber/Brigham and Women's Cancer Center: BEH/ETP responded to notification of high heterotrophic plate counts in water supplied to the cancer treatment facility on August 20, 2008. BEH/ETP collaborated with the Infection Control Department at Dana-Farber Cancer Institute, DEP, the Milford Regional Medical Center, and the Bureau of Infectious Disease Services.

Millbury - Perchlorate in Water: High levels of perchlorate were identified in the Millbury water supply; BEH was notified on September 8, 2008 and subsequently notified EPB. A public

advisory was required by BEH based on possible harmful effects on pregnant women, infants, children up to age 12, and persons with thyroid conditions.

Newbury - Water Incident: The Holistic Family Health Practice in Newbury was required to notify users of a do not drink order based on high fecal coliform and *E. coli* levels in the water supply on August 15, 2008. EPB was notified.

North Adams - Mercury Incident Town Hall: On September 24, 2008, BEH/IAQ and other staff responded to an emergency in North Adams involving a reported release of mercury in the town hall. EPB was notified. Thirty staff in the North Adams Town Hall were screened for mercury exposure and an indoor air quality assessment was performed.

Pembroke - Water Supply: *E. coli* and high total coliform levels were detected in the Pembroke water supply on August 8, 2008 FPP worked with local Board of Health. A boil water order was issued based on exceedances. EPB was notified.

Pembroke - Oldham Pond, Blue Green Algae: BEH /ETP responded to a notification of a blue green algae bloom in a Pembroke pond on September 25, 2008.

South Hadley - Water supply: August 13, 2008 BEH/FPP worked with S. Hadley public health to address *E. coli* in the water system and affected food facilities. EPB was notified.

Sutton - Water Supply: BEH was notified of an exceedance of the MCL for total coliform, and the issuance of a boil water order to the Manchaug Water Division by DEP on August 21, 08. EPB was notified.

Tyngsborough - Radon in Water: August 11, 2008, BEH/RCP representatives investigated conditions in a condominium facility in Tewksbury where high levels of radon in the water supply (on site) had been identified. EPB was notified, and BEH/RCP and ETP staff provided information on indoor air concerns with respect to radon infiltration of the building and recommended changes to building to prevent radon entry.

Wareham - Water Incident: On August 22, 2008, the town of Wareham issued a boil water order due to high levels of coliform in the water supply. EPB was notified, and BEH/FPP worked with local public health agency with regard to local retail food response actions and planning.

Watertown - Pesticide Incident: BEH/ETP staff responded to a request for assistance from the Watertown Board of Health regarding a possible chemical exposure related to a misapplication of pesticides in August, 2008.

Webster - Seafood Transport Incident: On July 27, 2008, an early morning traffic incident occurred involving a tractor trailer containing seafood, including live lobsters. BEH/FPP, and consequently EPB, was not notified of the event. Response to the event was complicated by failure of the Incident Commander to contact FPP immediately, and improper embargo and disposal process by the local health agent, resulting in subsequent sale and consumption of a

condemned product. Massachusetts' Environmental Police, DEP and BEH/FPP discussed response actions with Mass Highway at a subsequent after action report (AAR) meeting.

Wellesley - Blood Mercury Levels: In August, 2008, BEH/ETP provided consultation to a physician concerned about a patient with elevated blood mercury levels. BEH/ETP interpreted clinical testing results and referred physician to an environmental/occupational physician to determine treatment options.

West Brookfield - Water Supply: On August 22, Madden Estates was required by BEH and DEP to notify users of its water supply of a DEP boil water order due to high levels of total coliform and *E. coli*. EPB was notified of the incident.

Westfield - Water Supply: On August 22, 2008, BEH was notified of a water main break in Westfield. BEH was subsequently notified EPB.

Westwood - Hale Reservation, Water Incident: On August 20, 2008, Community Sanitation Program (CSP), FPP and ETP responded to a report of *E. coli* contamination in two wells serving a camp at the Hale Reservation. Do not drink/boil water orders were served.

Facility/Licensee Responses

QSA Global, Inc: RCP/NIAT responded on August 21, 2008 to a manufacturing accident involving Iridium-192. Dose assessments were carried out at the site. EPB was notified.

Second Street Scrap Metal, Everett: RCP/NIAT investigated report of radiation at a recycling center; a 12 uCi Radium-226 gauge was found in scrap metal on August 25, 2008.

QSA Global, Inc: On September 15, 2008, RCP/NIAT responded to report of problem with source retraction at facility.

Other

Salmonella St. Paul Outbreak: July 28, 2008 a different *S. Saint Paul* outbreak was identified by the Centers for Disease Control and Prevention (CDC) and a contaminated food sample (ground turkey) found in Mass.

Multistate E. coli Outbreak: August 8, 2008, five cases of *E. coli* foodborne illness were identified linked to product sold by Whole Foods.

Melamine in infant formula: FPP responded to concerns of melamine contamination in infant formula that might have been imported from China. Pre-emptive testing and sampling was initiated following notification by CDC on September 11, 2008.

Food transportation incident: September 3, 2008, BEH/FPP responded to a traffic incident involving the transport of 20,000 pounds of frozen shrimp. DFS Hazmat was called to the scene. BEH/FPP assessed product and determine disposition of product.

Multi-state cluster, E.coli: BEH/FPP collaborated in the response to a multi-state cluster of *E. coli*, with 2 cases in Massachusetts.

d. October – December 2008

Local Incidents

Avon - Versacold Food Storage Facility Fire Response: BEH /FPP and ETP staff responded to the consequences of a fire at the Versacold cold storage facility in Avon, MA that occurred on October 13, 2008. Activities included disposal of adulterated product and sample collection and analysis of environmental and food product samples to assess decomposition and/or contamination of product. BEH /ETP and IAQ programs assisted with the identification of areas of greatest likely impact for environmental sampling. The US Food and Drug Administration (FDA) assisted MDPH by conducting decomposition testing. MDPH/BEH concluded that based on all of the activities conducted and FDA decomposition testing/analysis, no evidence to detain the food products was found.

Boxford - E.coli in water supply: Contamination of the water supply provided at the Boxford Community Store resulted in a boil water order on November 10, 2008. EPB was notified.

Burlington - carbon monoxide exposure: BEH/ETP responded to a call from a Burlington resident involving low level carbon monoxide exposure from a malfunctioning furnace. Concerns included possible exposure of young children and a pregnant wife with a heart condition. Instruction and educational materials were provided to the family in collaboration with the BEH/IAQ program and the BEH staff physician.

East Hampton - fertilizer incident: BEH/ETP responded to a call from a school nurse requesting information regarding an application of fertilizer to a local playing field. BEH/ETP collaborated with the DAR Pesticide Bureau and provided information related fertilizer exposure concerns in November 2008.

Framingham - meat incident: BEH/FPP assisted Framingham Board of Health with regard to meat drop incidents starting on November 20, 2008. Several packages of packaged meat were found in parks and other public areas around Framingham.

Hopkinton - traffic incident: BEH/FPP responded to a truck turnover in Hopkinton involving produce. FPP discusses option for disposal of product and possible provision to local farms with Department of Agricultural resources on November 17, 2008.

Mystic River Algal Bloom: BEH /ETP responded to a report of a blue-green algal bloom on the Mystic River on November 20, 2008.

North Adams - Mercury Incident: On December 3, 2008, the North Adams Board of Health requested BEH assistance with regard to a significant release of mercury in the Silvio Conte School. EPB was notified. The release was reportedly caused by a student who brought in and

released a quantity of mercury in a hallway on purpose. Readings showed that significant quantities of mercury had been tracked through other parts of the school and onto children's and staff's shoes. Additional related contamination was identified in a local high school, church, and in the home of the child who had acquired the mercury. BEH was later notified of investigations by DFS/Hazmat at a closed industrial site where the child had reportedly obtained the mercury. Mercury testing was offered to people within the school and those in other contaminated areas. Testing was coordinated with the State Laboratory and BEH consent forms forwarded to the North Adams Board of Health. BEH/IAQ worked with the North Adams Board of Health to survey facility, assess contamination levels and coordinate assistance.

Pembroke - Water Supply: High levels of *E. coli* on November 28, 2008 resulted in a DEP boil water order. EPB was notified.

Sherborn - Water Supply: On December 3, 2008, the owners of Sherborn Plaza were required to issue a do not drink/boil water order for tenants and food establishments of a property served by a private water supplier based on exceedances of the maximum contaminant levels (MCL's) for bacteria. EPB was notified.

Sterling - Municipal Water Supply: On November 18, 2008, BEH was notified by DEP of elevated perchlorate levels in that town's water supply system. BEH /ETP staff responded. A public advisory was issued based on potential harm to pregnant women, children under age 12, infants, and persons with thyroid conditions.

Western Mass - Ice Storm 2008 Response: BEH participated in the MDPH response to the ice storm in early December 2008 that affected Massachusetts cities and towns, and left 16,000 residents without heat or electricity. The BEH/FPP identified affected food processing facilities, and also worked with local boards of health to address retail food facilities affected by the storm. BEH/FPP staff used geographic information system (GIS) mapping capabilities to determine which cities and towns lost power, an indicator of a potential food supply hazard, using information from the electric supplier. This process facilitated targeted response by FPP staff to specific towns in greatest need of immediate assistance. In addition, information on food safety, water damage response measures, and related issues were supplied to EPB and the ESF-8 desk at MEMA when the State Emergency Operations Center was activated. An after action report is being developed for this event.

Facility/Licensee Responses

AKS Recycling, Fitchburg: October 15, 2008, RCP-NIAT responded to radiation signal due to a 6 mCi Radium-226 source found in a truck load of trash from Maine.

QSA Global, Inc: RCP/NIAT responded to a report of an equipment defect that caused source disconnect in a QSA Model 880 radiography device on October 17, 2008

Walmart Environmental Services: Two damaged and leaking exit signs reported on October 30, 2008 at a Northampton store, each contained 20 Ci of tritium. Devices disposed of after consultation with RCP/NIAT.

Cucurullo, Amesbury: RCP/NIAT responded on November 3, 2008 to a call regarding a 5 uCi Ra-226 source found affixed on a sewing machine screw assembly. Devices were disposed of as waste and the incident was reported to the Nuclear Regulatory Commission (NRC).

Geotechnical Consultants, Inc.: RCP/NIAT responded to a call regarding the theft of a Troxler gauge from a vehicle (40mCi Am/Be and 8 mCi Cs-137) on November 17, 2008.

Other

Multi-state cluster, Salmonella Poona: BEH/FPP responded to an outbreak involving 78 *S. poona* cases nationally, with 9 in Massachusetts on October 6, 2008.

Traffic Incident Marksmen Transport: On December 02, 2008, the BEH/FPP responded to a truck turnover on Rte 495. The incident resulted in damage to damage to produce in transport from a broken fuel tank. BEH/FPP assessed product and oversaw disposal actions.

e. January – March 2009

Local Incidents

Chatham - arsenic exposure: In January, 2009, BEH/ETP provided assistance to a physician in Chatham, MA related to a patient with elevated arsenic levels. ETP provided information related to urine testing and interpretation, and worked with the patient to determine possible sources of exposure.

Danvers - Indoor Air Quality Incident March 2009: BEH/IAQ provided assistance and consultation to an incident at St. Mary of the Annunciation School, a catholic school in Danvers, MA on February 25, 2009. BEH/IAQ staff visited the school to assist the local Board of Health in identifying environmental conditions that may have contributed to symptoms reported by students in the school auditorium. The Danvers Health Department reported that one student fainted, and fourteen students experienced symptoms (nausea) thereafter. Four students were sent to a local hospital for medical evaluation. Symptoms were consistent with poor indoor ventilation. Testing for carbon monoxide, ventilation levels, temperature, relative humidity, and particulate matter levels was carried out. BEH/IAQ provided several recommendations such as having an HVAC system inspection, enhance cross-ventilation, and a building-wide evaluation.

Holyoke - Norovirus Outbreak: BEH/FPP and the DPH Working Group on Foodborne Illness responded to a norovirus outbreak involving 94 persons originating at the Log Cabin in Holyoke on January 20, 2008.

New Bedford - Mercury Incident: BEH/IAQ staff responded to an incident at the New Bedford Vocational-Technical High School on February 19, 2009, involving significant quantities of mercury (Hg) found near a waste disposal unit. EPB was notified. The source of the mercury was tracked to mercury-containing manometers dismantled in the steam engineering room. Clean Harbors carried out clean up efforts and further testing was carried out by a consultant.

BEH/IAQ provided guidance on the testing and with respect to the decision on re-opening the school, upon request of the New Bedford Board of Health.

Sturbridge - Lead and Copper in Water Supply: The Sturbridge School District was notified on March 3, 2009 of high levels of lead and copper in a school water supply in exceedance of the MCL. EPB was notified. BEH/ETP and the BEH Childhood Lead Poisoning Prevention Program (CLPPP) responded.

King Peanut Salmonella Outbreak: BEH/FPP has participated in the national response to contamination of peanut products with *Salmonella typhimurium* originally processed through the King Nut facility in Georgia. As of February 17, 2009, Massachusetts had 48 reported cases of *S. typhimurium*. BEH/FPP worked with local Boards of Health to conduct and assess product recall effectiveness. An after action discussion and follow up report is being planned for this event.

Wellesley - Babson College, Norovirus outbreak: On March 27, 2009, BEH/FPP was notified by the MDPH Bureau of Infectious Disease Control of a norovirus outbreak at Babson College. 51 students were reported sick; one student was hospitalized and ten others had visited the Newton-Wellesley emergency room. Dining hall inspections, worker restrictions and other measures were taken in response.

Multi-state Salmonella carrau cluster: BEH/FPP was notified on March 27, 2009 of a cluster of *S. carrau*, involving 30 cases nationwide, and 3 cases in Massachusetts. A case-control study has been initiated by CDC.

Facility/Licensee Responses

Cardinal Health Nuclear: Lantheus Medical Imaging received a delivery from Cardinal Health Nuclear Pharmacy of F-18 on 3/18/2009 and identified the dose rate on the outside of the package to be 1.7 R/h. Cardinal Health believes the internal shielding of the package shifted.

Dana-Farber Cancer Institute: February 13, 2009, A RCP/NIAT representative responded to a report of a lost package with 250 uCi of P-32. The package was subsequently received and monitored at DFCI.

C. Exercises and After Action Reports

a. Completed Exercises

Pilgrim Nuclear Power Plant Exercises: BEH staff successfully completed 2008 exercises for the Pilgrim Nuclear Power Plant with the Massachusetts Emergency Management Agency (MEMA) and Emergency Planning Zone (EPZ) communities in Massachusetts.

Seabrook Nuclear Power Plant Exercises: BEH staff successfully completed 2008 exercises for the Seabrook Nuclear Power Plant with MEMA and EPZ municipalities.

Amesbury Traffic Incident-NIAT Response: BEH/RCP and other BEH staff participated in an after action report meeting (AAR) at the State Police headquarters in Danvers on June 18, 2008 to discuss issues related to the local and the RCP/NIAT response process. Several problems with respect to notification of RCP/NIAT by local responders, in addition to issues regarding the licensee, were identified.

Pittsfield Exercise, Radiological Dispersal Device (RDD): BEH staff participated in an exercise held in Pittsfield to assess local and hospital response to a radiological incident on July 23, 2008.

Webster Seafood Incident AAR: Staff from BEH and FPP attended an after action discussion on the Webster traffic incident involving the sale of condemned seafood on July 31, 2008 at State Police headquarters in Sturbridge. Problems with management of the product at the scene, embargo procedures and disposal were identified, in addition to issues related to notification of BEH/FPP and other partners.

Medfield Flood Exercise: Emergency Preparedness Region 4a held an exercise to assess the response actions for a flood on September 23, 2008. BEH participated in the exercise with EPB representatives. BEH staff provided feedback with regard to housing, food protection, and toxic materials concerns.

Rapid Response Team (RRT) Exercise: In the first quarter of 2009, FPP participated in a Foodshield pilot exercise involving the *Salmonella typhimurium* in peanut products response using a Rapid Response Team and ICS.

Ice Storm After Action and Evaluation: An after action meeting on response issues related to the Massachusetts ice storm earlier this winter was carried out with FPP on March 12 to assess response procedures and communications. A report will be provided.

b. Future/Ongoing Exercises

Peanut-Salmonella Outbreak AAR and Evaluation: An after action meeting and report will be developed to assess response actions and coordination following the 2009 Peanut Corporation of America *S. typhimurium* outbreak.

Vermont Yankee Power Plant Exercise: Exercises for testing plans for emergencies at the Yankee Nuclear Power Station in Vermont began March 18, 2009, with the final FEMA-graded exercise in June, 2009.

Moore Dam Exercise: BEH staff will participate in an exercise planned for May 9, 2009 to assess emergency response plans for the Moore Dam in NH. The scenario will involve a dam failure resulting in extensive downstream flooding, with consequences to Massachusetts towns along the Connecticut River and tributaries including Deerfield, Montague, Northfield, and others. The exercise is being run by TransCanada Hydro Northeast. BEH has requested additional information on the scope of this exercise in order to assist local Boards of Health in their response and to coordinate efforts with EPB.

EPB Exercises: EPB has provided a calendar of exercises for 2009; we will participate as required by the scope of play or upon request.

D. Presentations and Trainings

Water Emergency Response at Massachusetts Health Officers Association (MHOA) Annual Meeting: A presentation was given in conjunction with DEP on the subject of state and local response to water emergencies at the 2008 MHOA conference.

Environmental Health Program Response: A presentation was given on the subject of environmental health issues and emergency response at the MHOA 2008 conference.

United Response Manual: The United Response Manual (URM) for traffic incidents is currently undergoing revision and a draft developed. Drafts have undergone preliminary review by the BEH Director and by the three programs that respond to such events including BEH/RCP, FPP and CSP.

MDPH Response Capacity Trainings: BEH /RCP and IAQ staff continue to participate in trainings on emergency response for local Boards of Health. A training will be held in Chicopee in March. These trainings are part of an ongoing effort to coordinate planning efforts with respect to chemical releases and radiological incidents with local public health partners.

United Response Manual Trainings: BEH continues to provide trainings with Mass Highway and public safety partners on response to highway accidents. Environmental health issues involving radioactive materials, food, medical waste, and potential chemical exposures are discussed. Jana Ferguson is assisting with these trainings. Trainings have been given in 2009 in Lawrence, Devens, and Plymouth, with three additional trainings pending. Additional trainings were provided previously in 2008.

CDC EHTER Trainings: CDC has developed a series of trainings on emergency response to emergencies impacting environmental health, “Environmental Health Training in Emergency Response” or EHTER. A copy has been obtained and shared with all involved Program Directors for review. CDC indicated that we may use the training and modify it as necessary for our needs in Massachusetts. MHOA has been contacted with respect to using these trainings for local public health agencies. The training is also available (for a fee for non-members) through the National Environmental Health Association (NEHA). These trainings may be implemented through the Local Public Health Institute or other provider, such as MHOA, as core environmental health emergency training for Boards of Health. Ongoing trainings by BEH/FPP with local Boards of Health already address planning and response at the retail food facility level.

Public Health Food and Water Emergency Response Trainings: BEH/FPP staff conducted 2 one-day workshops in May 2008 entitled “Preparing for and Responding to Retail Food and Water Emergencies” that was attended by 55 local and state food regulators as well as

industry. The purpose of this training was to provide local boards of health with the knowledge and tools needed to prevent or minimize foodborne illness/injury before, during, and after a single or widespread event.

E. Studies/Surveys

Hospital Survey on Radiological Incident Response: BEH staff held a planning meeting on the development of a survey of hospital emergency room physicians to assess their level of preparedness for a radiological incident. This survey will provide a base of information for subsequent communications and trainings. A Harvard Medical School student has been identified and will work with the BEH on the implementation of the survey. BEH staff, including Dr. Jonathan Burstein and Bob Walker, Director of the RCP, are working on the development of the survey draft. A meeting on this project with EPB staff involved in hospital and emergency medical services planning efforts is being scheduled for April 2009.

Local Board of Health KI Survey: A letter was drafted to assess the effectiveness of potassium iodide (KI) distribution by local Boards of Health following delivery of KI materials in 2007 to the emergency planning zone (EPZ) communities. The survey process will be necessary to determine the effectiveness of local distribution methods and to inform the need for subsequent assistance to local Boards of Health to improve distribution and related communications prior to a nuclear power plant incident. The results of this survey will also affect response planning involving KI distribution by the EPB.

F. Planning and Collaborations

Potassium Iodide (KI) Plan: BEH met with the EPB to discuss the current status of the plans for delivery of KI to the public during an evacuation in response to a nuclear power plant emergency. This part of the KI plan is distinct from the pre-event delivery of KI to local Boards of Health completed in 2007, where distribution by the Boards of Health to the public occurs before a nuclear power plant accident. A list of assessment issues has been developed for the plan, along with a draft plan for the actual response phase actions. In addition to the acknowledged need for changes to the existing plan (e.g., for evacuee throughput at the KI dispensing sites; new site identification), recent changes in municipal health staffing in towns in the emergency planning zones enhance the need for effective event response planning where pre-event distribution based on statute may be limited. Bob Paone has been contacted with regard to initiating the planning process for EPB.

FAS-CAT analysis: The National Center for Food Protection and Defense has issued materials and information on a hazard assessment tool for State departments of agriculture and food protection programs. The Food Agriculture Sector Criticality Assessment Tool (FAS-CAT) tool was developed in order to help identify critical assets in the food and agriculture sector and provide reports to the Department of Homeland Security (DHS). The tool involves an Excel application created to: improve the overall process for food and agriculture critical system/sub-

system identification; provide greater equity in cross sector critical system identification for DHS; enable the states to identify critical food and agriculture system components; provide a common methodology to the process; and improve critical asset reporting to Homeland Security. Michael Cahill of DAR has been contacted with regard to using the tool in collaboration with BEH/FPP. A meeting is being scheduled to address this project.

ESF-8 additions: During the response to the Massachusetts Ice Storm in 2008, the Emergency Support Function-8, Health and Medical (ESF-8) desk at the State Emergency Operations Center requested materials related to food safety for distribution to the public. BEH is working with the Program Directors to identify materials that can supplement what has been provided to the ESF-8 desk or those that require updates to assist with effective environmental health response. The ICS tables under development will be provided as well.

FDA Rapid Response Team Cooperative Agreement: FPP continues work with the US FDA on the development of a rapid response team with core capabilities for emergency response to foodborne illness outbreaks.

NASDA Plan: Work on the revision of the Food Protection Program's comprehensive emergency plan continues. The plan will be based on a template developed by the National Association of State Departments of Agriculture (NASDA). Mike Moore in FPP has enrolled participating staff on Foodshield, an FDA networking tool for food safety to facilitate transfer of information and drafts. A meeting was held with MEMA staff (Mike Philbin and Erica Heidelberg who worked with BEH/RCP on the radiological/nuclear annex) to determine if the plan should be written as an annex to the Massachusetts Comprehensive Emergency Management Plan (CEMP) and to discuss ICS structure concerns related to both the plan and to the Food Protection Program's Rapid Response Team project. Several sections of the plan have been revised to date.

Mass. Contingency Plan for Hazardous Materials: MEMA has asked BEH to work with DEP and DFS to address public health emergency planning related to chemical exposure issues, air quality concerns and related environmental health threats following a major disaster (e.g., a hurricane or earthquake).

State Emergency Planning Commission (SERC): A meeting of the SERC will be held in May to discuss applications from several towns for Local Emergency Planning Committee/Regional Emergency Planning Committee (LEPC/REPC) certification. Beverly Anderson, the SERC Representative, will attend.

Incident Command System for Environmental Health: An ICS map for environmental health has been developed with plans to expand elements related to food protection based on the RRT program requirements from FDA. Further training for staff on ICS is being arranged.

EPA Blister Agent Planning Conference: BEH representatives and other MDPH staff participated in a conference in Lowell sponsored by the EPA in May of 2008 on the subject of response to a blister agent attack. A summary of the meeting was distributed by EPA in October 2008 and forwarded to EPB. The planning for such an event largely involves immediate Hazmat

and medical response, and environmental clean up. The agent involved, mustard-lewisite mixture, reacts quickly upon exposure damaging the skin, respiratory track, gastrointestinal tract, bone marrow and blood vessels. However, the agent breaks down over time in air and degrades rapidly by hydrolysis, and does not accumulate in the food chain. A risk assessment based on distribution patterns following an attack would likely be necessary for the secondary response phases and recovery phase. BEH is following up with a FEMA representative involved with this planning. MDPH/BEH planning will likely need to be tied into to the State hazardous materials contingency plan.

Poison Control Center: Meetings were held in 2008 with the MA-RI PCC to discuss emergency notification for various EH-related issues (i.e., food poisonings, nerve agent calls, pesticide-related poisonings, lead-related calls) to enhance emergency response coordination between BEH and the MA-RI PCC.

DFS-PPE Plan: BEH provided comments to EPB on a plan for statewide personal protective equipment (PPE) guidance provided by DFS on September 22, 2008.

DEP Debris Management Plan: BEH reviewed and met with DEP's John Fisher in January 2008 to discuss the Debris Management plan that will guide local authorities with respect to removal and/or containment of debris resulting from disaster. Included in the discussion were issues related to materials containing lead, dust-forming materials, asbestos found in building materials, dust generating materials, and related concerns.

FEMA Regional Interagency Steering Committee (RISC): This FEMA committee meets periodically to engage state and federal partners on emergency planning. A meeting on FEMA initiatives and a separate session on public outreach/ communications was attended on March 26, 2009 in Durham, NH. Among the possible issues for BEH identified at the meeting were the need for BEH coordination with Army Consequence Management Response Force team that supports response to CBRNE (chemical, biological, radiological, nuclear, events) events, contact with Region 1 FEMA representative for environmental issues, and work with DAR with respect to FAS-CAT analysis.

DEP Planning Meeting: DEP has requested a planning meeting to address emergency response issues where BEH and DEP have or will need to collaborate, including matters related to mercury release incidents, Field Assessment Support Team (FAST) vehicles, after action reports, and the Massachusetts Contingency Plan. We will also be discussing issues related to the Massachusetts Recovery Plan as BEH activities will be focused in this phase of response.

MEMA Planning Meeting: A meeting was held in February 2008 with MEMA representatives to discuss planning efforts related to ICS for environmental health, the development of the NASDA plan for food safety, hazardous materials incident planning with respect to BEH response, and related issues. A separate meeting was also held in March 2008 for ESF-11 regarding the provision of bulk food to support emergency response and relief operations; a BEH/FPP representative participated in that meeting.

Interstate Chemical Terrorism Workgroup (ICTW): The upcoming ICTW conference call will focus on field operations during a chemical terrorism incident or release, including a presentation on decontamination of pediatric populations. A report on the discussion, with respect to issues related to issues and concerns that may be similar to those involved with a radiological incident response will be provided to BEH/RCP.

CHEMPACK—BEH continues with efforts to collaborate with EPB’s Strategic National Stockpile (SNS) program on the CDC CHEMPACK program. This program will provide pre-event stores of chemical agent antidotes to hospitals to aid victims of major emergencies including chemical terrorism attacks. BEH has requested that an EPB representative contact ICTW with regard to presenting material on the CHEMPACK program.

DTPA Addition to SNS – BEH staff participated in planning efforts with EPB in December 2008 to accept and preposition up to 2,000 doses of DTPA (diethylenetriamine pentaacetic acid) from the CDC as part of the SNS program. DTPA is a medical countermeasure that can be provided to individuals with known or suspected internal contamination following a radiological incident (e.g., a “dirty bomb”). The drug prevents integration of specific radioactive materials to target organs. The ready availability of the countermeasure to hospitals will protect victims against long term cancer threats from three potential radiation dispersal device (RDD) radionuclides: americium, plutonium, and curium. The program is a joint effort between the National Center for Environmental Health, Radiation Studies Branch, and the CDC SNS program.

G. Acronym List

<i>AAR</i>	<i>After action report</i>
<i>ATF</i>	<i>Bureau of Alcohol, Tobacco and Firearms</i>
<i>ATSDR</i>	<i>Agency for Toxic Substance and Disease Registry</i>
<i>BEH</i>	<i>Bureau of Environmental Health</i>
<i>CBRNE</i>	<i>Chemical, biological, radiological, nuclear events</i>
<i>CDC</i>	<i>Centers for Disease Control and Prevention</i>
<i>CEMP</i>	<i>Comprehensive Emergency Management Plan</i>
<i>CLPPP</i>	<i>Childhood Lead Poisoning Prevention Program</i>
<i>CSP</i>	<i>Community Sanitation Program</i>
<i>DAR</i>	<i>Departments of Agricultural Resources</i>
<i>DEP</i>	<i>Department of Environmental Protection</i>
<i>DFS</i>	<i>Departments of Fire Services</i>
<i>DHS</i>	<i>Department of Homeland Security</i>
<i>EPA</i>	<i>Environmental Protection Agency</i>
<i>EPB</i>	<i>Emergency Preparedness Bureau</i>
<i>EPZ</i>	<i>Emergency Planning Zone (for nuclear power plants)</i>
<i>ESF</i>	<i>Emergency Support Function</i>
<i>ETP</i>	<i>BEH Environmental Toxicology Program</i>
<i>FAS-CAT</i>	<i>Food and Agriculture Sector Criticality Assessment Tool</i>
<i>FBI</i>	<i>Federal Bureau of Investigation</i>
<i>FDA</i>	<i>Food and Drug Administration</i>

<i>FEMA</i>	<i>Federal Emergency Management Agency</i>
<i>FPP</i>	<i>BEH Food Protection Program</i>
<i>GIS</i>	<i>Geographic Information System</i>
<i>Hazmat</i>	<i>Hazardous Materials Division of DFS</i>
<i>IAQ</i>	<i>Indoor Air Quality Program</i>
<i>ICS</i>	<i>Incident Command System</i>
<i>KI</i>	<i>Potassium iodide</i>
<i>IND</i>	<i>Improvised Nuclear Device</i>
<i>LEPC</i>	<i>Local Emergency Planning Committee</i>
<i>MA-RI PCC</i>	<i>Massachusetts-Rhode Island Poison Control Center</i>
<i>MCL</i>	<i>Maximum contaminant level</i>
<i>MEMA</i>	<i>Massachusetts Emergency Management Agency</i>
<i>MHOA</i>	<i>Massachusetts Health Officers Association</i>
<i>NASDA</i>	<i>National Association of State Departments of Agriculture</i>
<i>NIAT</i>	<i>Nuclear Incident Advisory Team</i>
<i>NPP</i>	<i>Nuclear power plant</i>
<i>PPE</i>	<i>Personal protective equipment</i>
<i>RCP</i>	<i>BEH Radiation Control Program</i>
<i>RDD</i>	<i>Radiation Dispersal Device</i>
<i>REPC</i>	<i>Regional Emergency Planning Committee</i>
<i>RRT</i>	<i>FPP Rapid Response Team</i>
<i>SERC</i>	<i>State Emergency Response Commission</i>
<i>SNS</i>	<i>Strategic National Stockpile</i>
<i>URM</i>	<i>United Response Manual</i>