NFPA 470: 2022 Edition, Chapter 11 Hazardous Materials/WMD Technician

Below please find what has been previously approved by the Committee on Accreditation (COA) for this level of certification. This example does not take into consideration “Document Review”, “Portfolio”, or “Other testing methods.”

If your agency selects completing their online Assessment Methodology Matrix (AMM) utilizing these test methods, our Technical Analysts may place your application under a COA meeting consent agenda bypassing the usual COA review.

The spaces identified below with an “**X**” must be replaced with the appropriate cognitive test item numbers (e.g. Questions 1,4,6,7,9, etc.) or the score sheet numbers under Product, Psychomotor/Process methods as score sheet numbers (e.g.- SS 101, 202, and 304, etc.).

	Knowledge-Based Assessments (graded after submission)		**Performance-Based Assessments** (graded in real-time as they are performed)	
Section	**Cognitive** (e.g. Multiple Choice, Short Answer, Discretionary Time with Resources)	**Product** (e.g., document or develop a budget, proposal, lesson plan)	**Psychomotor** (Primarily an observable physical task. e.g., don, doff)	**Process** (Primarily a mental or verbalized task. e.g., inspect)
11.2.1 Collect and interpret hazard and response information at a hazardous materials/WMD incident, given a hazardous materials/WMD incident, including an incident with no release, incidents with a release of visible vapor cloud, liquid pooling, or solid dispersion with and without victims, and an incident with victims displaying signs and symptoms without an apparent chemical release; an assignment, policies and procedures; approved reference sources; and approved tools and equipment, so that hazard and response information is collected, interpreted, and communicated.				
11.2.1			**X**	
11.2.1 (A) Requisite Knowledge. Types, advantages, and limitations of hazard and response information available from approved reference sources; significance and application of hazard and response terms, including chemical and physical properties to include (1) Autorefrigeration, (2) Compound, (a) Inorganic, (b) Organic, (3), Compressed gases, (a) Critical pressure, (b) Critical temperature, (4) Corrosives, (a) Dilution, (b) Neutralization, (5) Decomposition temperature, (6) Endothermic, (7) Exothermic, (8) Heat transfer process, (a) Conduction, (b) Convection, (c) Direct Contact, (d) Radiation, (9) Mixture versus pure compound, (10) Odor threshold, (11) Radiation, (a) Alpha, (b) Beta, (c) Gamma, (d) Half-life, (e) Isotope, (f)				

Neutron, (12) Particulate size, (13) Polymerization, (a) Catalyst, (b) Inhibitor, (c) Maximum safe storage temperature (MSST), (d) Monomer, (e) Self-accelerating decomposition temperature (SADT), (14) Pyrophoric, (15) Solubility, (a) Miscibility, (b) Nonpolar, (c) Polar, (d) Solution, (16) Slurry, (17) Sublimation, (18) Temperature of product, (19) Vapor density (relative gas density), (20) Vapor pressure, (21) Viscosity, (22) Volatility and (a) Biological effect, i. Carcinogen, ii. Irritant, iii. Mutagen, iv. Teratogen, (b) Concentration units, i. Parts per billion (ppb), ii. Parts per million (ppm), iii. Milligrams per meter cubed (mg/m3), (c) Dose, (d) Dose response, (e) Exposure levels, i. Protective action criteria (PAC), ii. Immediately dangerous to life and health (IDLH), iii. Incapacitating concentration (I50), iv. Lethal concentration (LC50), v. Lethal dose (LD50), vi. Permissible exposure limit (PEL), vii. Recommended exposure limit (REL), viii. Threshold limit value — ceiling (TLV-C), ix. Threshold limit value — short-term exposure limit (TLV-STEL), x. Threshold limit value — time-weighted average (TLV-TWA), (f) Incubation period, (g), Infectious dose, (h) Inhalation hazards, i. Poison inhalation hazard (PIH), ii. Toxic inhalation hazard (TIH), (i) Radiation dose rate, (j) Radiation units, i. Counts per minute (cpm) and kilo counts per minute (kcpm), ii. Radiation absorbed dose (rad), iii. Roentgen equivalent man (rem), millirem (mrem), microrem (µrem), iv. Sievert, millisievert (mSv), microsievert (µSv), v. Becquerel (Bq), vi. Curie (Ci), vii. Gray (Gy), signs and symptoms and target organ effects of exposure to hazardous materials/WMD; methods for determining the pressure and amount of lading in bulk containers and facility containers; and hazard and response information to be communicated.			
11.2.1(A)	X		
11.2.1 (B) Requisite Skills. Collecting and interpreting hazard and response information; identifying signs and symptoms of exposure to hazardous materials/WMD, including target organ effects of exposure to hazardous materials/WMD; and determining radiation exposure rates from labels attached to radioactive materials containers.			
11.2.1(B)			X
11.2.2 Classify hazardous materials/WMD and verify the presence and concentrations of hazardous materials through detection, monitoring, and sampling at a hazardous materials/WMD incident, given hazardous materials/WMD incidents, including one involving criminal intent, with released identified and unidentified hazardous materials; an assignment in an incident action plan (IAP); policies and procedures; approved resources; detection and monitoring equipment; and personal protective equipment (PPE), so that PPE is selected and used; hazardous materials/WMD are classified by their basic hazard categories; the presence of hazardous materials is verified; the concentrations of hazardous materials in the atmosphere are determined; signs of exposure in victims and responders are recognized and identified; samples of solids, liquids, and gases are collected; results of detection and monitoring equipment are read, interpreted, recorded, and communicated; exposures and personnel are protected; safety procedures are followed; hazards are avoided or minimized; law enforcement agencies are notified as needed; samples to be sent to laboratories are field screened and appropriately packaged; personnel using the detection, monitoring, and sampling equipment, as well as the equipment, are decontaminated;			

detection, monitoring, and sampling equipment is maintained according to manufacturers' recommendations; and detection, monitoring, and sampling operations are reported and documented.			
11.2.2		X	X
11.2.2 (A) Requisite Knowledge. Basic categories of harm, including, but not limited to, thermal (heat and cold), radiation, chemical (toxic), reactive, corrosive, explosive, oxygen depletion, biological, and mechanical and their definitions; policies and procedures; detection, monitoring, and sampling technologies; analysis process for classifying basic hazard categories of identified solid, liquid, and gaseous materials and unidentified contaminants in the atmosphere; types of detection, monitoring, and sampling equipment [colorimetrics (e.g., tubes, chips, papers, strips, reagents); electrochemical cells (e.g., toxic gas sensors), flammable gas/LEL, noncontact thermal detection device, oxygen concentration, photoionization detector (PID), biological detection, and radiation detection and monitoring]; process for determining radiation dose rates from radioactive material labels; determining background, rate, and dose; determining if a radioactive materials container is leaking/breached by comparing meter readings to Transportation Index (TI); process for monitoring lighter-than-air gases and vapors, heavier-than-air gases and vapors in a confined area, and heavier-than-air gases and vapors in an unconfined area; capabilities and limiting factors of detection, monitoring, and sampling equipment; detection, monitoring, and sampling equipment required to classify the basic hazard categories; recognition and identification of signs and symptoms and target organ effects of exposure in victims and responders; methods for collecting samples of solids, liquids, and gases; detection options for gases, liquids, and solids at illicit laboratories, suspicious packages, environmental crimes, and intelligence threat incidents; procedures to introduce samples into network laboratories; procedures for field screening samples; packaging requirements for samples being sent to a laboratory; reading, interpreting, recording, and communicating test results of detection and monitoring, and sampling equipment; procedures for decontaminating detection, monitoring, and sampling equipment according to manufacturer's recommendations or AHJ policies and procedures; and maintenance and testing procedures including functional test, calibration, and other required tests for approved detection, monitoring, and sampling equipment.			
11.2.2(A)	X		
11.2.2 (B) Requisite Skills. Selecting and using PPE; determining radiation dose rates from radioactive material labels; using each of the following types of detection, monitoring, and sampling equipment [colorimetrics (e.g., tubes, chips, papers, strips, reagents); electrochemical cells (e.g., toxic gas sensors), flammable gas/LEL, noncontact thermal detection device, oxygen concentration, photoionization detector (PID), and radiation detection and monitoring devices] to either classify hazardous materials by basic hazard categories, verify the presence of hazardous materials or determine the concentration of hazardous materials when possible; collect samples of gases, liquids, and solids; monitoring, reading, interpreting, recording, and communicating readings from detection, monitoring, and sampling equipment according to the manufacturers' specifications and recommendations; and completing required reports and supporting documentation for detection, monitoring, and sampling operations.			

11.2.2 (B)		X	X
11.2.3 Assess the condition of a container and its closures at a hazardous materials/WMD incident, given an incident involving hazardous materials/WMD; an assignment; policies and procedures; the scope of the incident; identity of material(s) involved and their hazards, including results of detection, monitoring, and sampling; a container with required markings; and approved resources and PPE, so that PPE is selected and used; the container and its closures are inspected; the type of damage to the container and closures is identified; the type of stress on the container is identified; the level of risk associated with container and closure damage and stress is identified; safety procedures are followed; hazards are avoided or minimized; personnel, tools, and equipment are decontaminated; and a description of the condition of the container and its closures is communicated.			
11.2.3			X
11.2.3 (A) Requisite Knowledge. Process for assessing container condition; basic design and construction features, including closures for bulk, intermediate bulk, and nonbulk containers, facility containers, radioactive materials containers, and piping and pipelines; types of damage and their level of risk; types of stress; specification markings; and methods for determining the pressure and quantity of lading remaining in containers and indicators of an increase in container pressure.			
11.2.3(A)	X		
11.2.3 (B) Requisite Skills. Assessing the condition of the container and its closures, identifying the type of damage and level of risk associated with the damage, identifying stress(es) on the container, and communicating the condition of the container and its closures and the level of risk associated with that condition.			
11.2.3(B)			X

	Knowledge-Based Assessments (graded after submission)		**Performance-Based Assessments** (graded in real-time as they are performed)	
Section	**Cognitive** (e.g. Multiple Choice, Short Answer, Discretionary Time with Resources)	**Product** (e.g., document or develop a budget, proposal, lesson plan)	**Psychomotor** (Primarily an observable physical task. e.g., don, doff)	**Process** (Primarily a mental or verbalized task. e.g., inspect)
11.2.4 Predict the behavior of the hazardous materials/WMD involved in a hazardous materials/WMD incident, given an incident involving multiple hazardous materials/WMD; an assignment; policies and procedures; physical and chemical properties of the materials involved; results of detection, monitoring,				

and sampling; condition of the container (damage and stress); surrounding conditions; and approved reference sources, so that the behavior of each hazardous materials/WMD container and its contents is identified, the reactivity issues and hazards of the combined materials are identified, and a description of the likely behavior of the hazards is communicated.			
11.2.4			X
11.2.4 (A) Requisite Knowledge. Application of the general hazardous materials behavior model to evaluate and predict likely behaviors of containers and materials; impact of fire and safety features on the behavior of products at bulk liquid and bulk gas facilities, including fire protection systems, monitoring and detection systems, pressure relief and vacuum protection, product spillage and control, tank spacing, and transfer operations and heat transfer processes that occur as a result of a cryogenic liquid spill; and methods for communicating the results of predicting behavior.			
11.2.4(A)	X		
11.2.4 (B) Requisite Skills. Applying the general hazardous materials behavior model to predict likely behavior of materials and their containers when multiple materials are involved, identifying reactivity issues associated with mixing various hazardous materials, and communicating the predicted behavior.			
11.2.4(B)			X
11.2.5 Estimate the potential outcomes at a hazardous materials/WMD incident, given a hazardous materials/WMD incident, an assignment, policies and procedures, the likely behavior of the container and its contents, and approved resources and equipment, so that the concentrations of materials within the endangered area are measured or predicted; physical, health, and safety hazards within the endangered area are identified; areas of potential harm in the endangered area are identified; potential outcomes within the endangered area are identified; and potential outcomes are communicated.			
11.2.5			X
11.2.5 (A) Requisite Knowledge. Methods for determining concentrations of materials within the endangered area; resources for dispersion pattern prediction and modeling, including computers, monitoring equipment, or specialists in the field; methods for identifying physical, health, and safety hazards within the endangered area; health hazard terms and exposure values to include (a) Biological effect, i. Carcinogen, ii. Irritant, iii. Mutagen, iv. Teratogen, (b) Concentration units, i. Parts per billion (ppb), ii. Parts per million (ppm), iii. Milligrams per meter cubed (mg/m3), (c) Dose, (d) Dose response, (e) Exposure levels, i. Protective action criteria (PAC), ii. Immediately dangerous to life and health (IDLH), iii. Incapacitating concentration (I50), iv. Lethal concentration (LC50), v. Lethal dose (LD50), vi. Permissible exposure limit (PEL), vii. Recommended exposure limit (REL), viii. Threshold limit value — ceiling (TLV-C), ix. Threshold limit value — short-term exposure limit (TLV-STEL), x. Threshold limit value — time-weighted average (TLV-TWA), (f) Incubation period, (g), Infectious dose, (h) Inhalation hazards, i. Poison inhalation hazard (PIH), ii. Toxic inhalation hazard (TIH), (i) Radiation dose rate, (j) Radiation units, i. Counts per			

minute (cpm) and kilo counts per minute (kcpm), ii. Radiation absorbed dose (rad), iii. Roentgen equivalent man (rem), millirem (mrem), microrem (μrem), iv. Sievert, millisievert (mSv), microsievert (μSv), v. Becquerel (Bq), vi. Curie (Ci), vii. Gray (Gy), and their significance in the analysis process; methods for identifying areas of potential harm within the endangered area; methods for identifying potential outcomes in the areas of potential harm within the endangered area; and procedures for communicating potential outcomes.			
11.2.5(A)	X		
11.2.5 (B) Requisite Skills. Using approved resources and equipment; determining concentrations of materials within the endangered area; identifying the physical, health, and safety hazards within the endangered area; identifying the areas of potential harm in the endangered area; estimating the potential outcomes in the endangered area; and communicating the potential outcomes.			
11.2.5(B)			X
11.3.1 Develop and recommend to the Incident Commander or Hazardous Materials Officer strategies and tactics at a hazardous materials/WMD incident, given a hazardous materials/WMD incident; an assignment; results of the incident analysis, including incident-related information, life safety risks, environmental risks, and property risks; available resources; and policies and procedures, so that strategies are identified for the incident and tactics are identified for each strategy.			
11.3.1			X
11.3.1 (A) Requisite Knowledge. Possible tactics to accomplish given strategies, including public protective tactics, considerations for identifying strategies (defensive, offensive, and nonintervention), and possible strategies.			
11.3.1(A)	X		
11.3.1 (B) Requisite Skills. Developing strategies for a hazardous materials incident and identifying tactics for each strategy.			
11.3.1(B)			X
11.3.2 Select the PPE ensemble required for a given tactic at a hazardous materials/WMD incident, given a hazardous materials/WMD incident, results of the incident analysis, strategies and tactics for the incident, approved references, and policies and procedures, so that required PPE is identified for each tactic.			
11.3.2			X

	Knowledge-Based Assessments (graded after submission)		Performance-Based Assessments (graded in real-time as they are performed)	
Section	**Cognitive** (e.g. Multiple Choice, Short Answer, Discretionary Time with Resources)	**Product** (e.g., document or develop a budget, proposal, lesson plan)	**Psychomotor** (Primarily an observable physical task. e.g., don, doff)	**Process** (Primarily a mental or verbalized task. e.g., inspect)
11.3.2 (A) Requisite Knowledge. Identify the PPE available for response based on NFPA PPE standards and certification levels; OSHA/EPA levels of PPE (A, B, C, and D); advantages of using certified PPE; types of PPE available for anticipated hazards identified through a risk-based response analysis; factors to be considered in selecting respiratory protection; factors to be considered in selecting chemical-protective clothing (CPC); factors to be considered in selecting PPE for incidents involving illicit laboratories, suspicious packages, intelligence threats, and environmental crimes; significance of degradation, penetration, and permeation on the selection of protective clothing; indications of material degradation of protective clothing; advantages and limitations of the different designs of liquid splash–protective ensembles and vapor-protective ensembles; types, advantages, and limitations of cooling measures for cooling personnel wearing PPE; the PPE selection matrix from NFPA 1891, Annex B; limitations when using the information provided on chemical compatibility charts; and effects of physiological and psychological stresses on users of PPE.				
11.3.2(A)	X			
11.3.2 (B) Requisite Skills. Selecting PPE ensemble for a specified tactic based on all hazards identified and determining the effectiveness of protective clothing based on its uses and limitations.				
11.3.2(B)			X	
11.3.3 Select the decontamination method for a given tactic at a hazardous materials/WMD incident, given a hazardous materials/WMD incident, results of the incident analysis, strategies and tactics for the incident, available resources, and policies and procedures, so that a decontamination method to minimize the hazards for each tactic is identified and the equipment required to implement the decontamination method is identified.				
11.3.3			X	
11.3.3 (A) Requisite Knowledge. Decontamination methods, including absorption, adsorption, chemical degradation, dilution, disinfection, evaporation, isolation and disposal, neutralization, solidification, sterilization, vacuuming, and washing; advantages and limitations of decontamination methods; decontamination methods for incidents involving illicit laboratories, suspicious packages, intelligence				

threats, and environmental crimes; reference sources for determining applicable decontamination operations and methods; methods for accessing these resources; and equipment required to implement specified decontamination operations and methods.			
11.3.3(A)	X		
11.3.3 (B) Requisite Skills. Selecting decontamination procedures (operations and methods) and identifying the equipment required to implement decontamination procedure (operations and methods).			
11.3.3(B)			X
11.3.4 Develop a plan of action for a hazardous materials/WMD incident, given a hazardous materials/WMD incident, an assignment, results of the incident analysis, strategies and tactics for the given incident, available resources, and policies and procedures, so that the tasks and resources required to meet the strategies are identified, specified strategies and tactics are addressed, plan is consistent with the emergency response plan and policies and procedures, and plan is within the capability of available personnel, PPE, and control equipment.			
11.3.4			X
11.3.4 (A) Requisite Knowledge. Components of an IAP and subplans; definitions of control, confinement, containment, and extinguishment; purpose of, procedures for, required tools and equipment for, and safety precautions for various techniques for hazardous materials/WMD (product) control; components of a safety briefing; atmospheric and physical safety hazards associated with hazardous materials/WMD in confined spaces; pre-entry tasks to be performed; and procedures, equipment, and safety precautions for preserving and collecting legal evidence.			
11.3.4(A)	X		
11.3.4 (B) Requisite Skills. Preparing an action plan, identifying site safety and control components, identifying points for a safety briefing, identifying pre-entry tasks, identifying atmospheric and physical safety hazards when incident involves a confined space, and preserving and collecting legal evidence.			
11.3.4(B)			X
11.4.1 Perform assigned hazardous materials branch or group functions within ICS at a hazardous materials/WMD incident, given a hazardous materials/WMD incident; an assignment; results of the incident analysis; policies and procedures, including an emergency response plan and standard operating procedures; the IAP; and approved resources, so that the assigned functions within the hazardous materials branch or group are completed.			
11.4.1			X

11.4.1 (A) Requisite Knowledge. Organizational structure of the hazardous materials branch or group; duties and responsibilities of hazardous materials branch or group functions; resources available to complete assigned functions; reporting structure; and procedures for communicating with the hazardous materials branch or group supervisor, ICS operations section chief, or IC.				
11.4.1(A)	X			
	Knowledge-Based Assessments (graded after submission)		**Performance-Based Assessments** (graded in real-time as they are performed)	
Section	**Cognitive** (e.g. Multiple Choice, Short Answer, Discretionary Time with Resources)	**Product** (e.g., document or develop a budget, proposal, lesson plan)	**Psychomotor** (Primarily an observable physical task. e.g., don, doff)	**Process** (Primarily a mental or verbalized task. e.g., inspect)
11.4.1(B) Requisite Skills. Performing the duties and responsibilities of an assigned function in the hazardous materials branch or group organization and communicating observations to hazardous materials branch director/group supervisor, ICS operations section chief, or IC.				
11.4.1(B)			X	
11.4.2 Test, don, work in, and doff PPE at a hazardous materials/WMD incident, given a hazardous materials/WMD incident, an assignment, policies and procedures, results of the incident analysis, strategies and tactics for the incident, and PPE ensembles as identified in the IAP, so that PPE is inspected, donned, worked in, decontaminated, and doffed; safety procedures are followed; hazards are avoided or minimized; equipment is maintained and stored properly; and the use of PPE is reported and documented				
11.4.2		X	X	
11.4.2 (A) Requisite Knowledge. Types of PPE and the hazards for which they are used; capabilities, advantages, limitations, selection, and use of PPE; components of an IAP; safety procedures for personnel working in PPE; additional safety concerns of working in the hot zone; procedures for being decontaminated while wearing PPE; procedures for maintenance, testing, inspection, and storage of PPE according to manufacturers' specifications and recommendations; and importance of personnel exposure records, steps in keeping an activity log and exposure records, requirements for reporting and documenting the use of PPE, and requirements for filing documents and maintaining records.				
11.4.2(A)	X			

11.4.2 (B) Requisite Skills. Testing, inspecting, donning, working in, going through technical decontamination while wearing PPE; and completing required reports and supporting documents for the use of PPE.			
11.4.2(B)		X	X
11.4.3.1 Perform product control techniques at a hazardous materials/WMD incident, given a hazardous materials/WMD incident with release of product, an assignment, results of the incident analysis, policies and procedures for product control, strategies and tactics for the incident, and approved tools, equipment, control agents, and PPE, so that an approved product control technique is selected and implemented; the product is controlled; approved PPE is selected and used; exposures and personnel are protected; safety procedures are followed; hazards are avoided or minimized; personnel, victims, tools, and equipment used are decontaminated; tools and equipment are inspected and maintained; and product control operations are reported and documented.			
11.4.3.1		X	X
11.4.3.1(A) Requisite Knowledge. Types of PPE and the hazards for which they are used; policies and procedures for product control; product control techniques (absorption, adsorption, blanketing, damming, diking, dilution, dispersion, diversion, neutralization, overpacking, patching, plugging, pressure isolation and reduction, retention, remote valve shutoff, vapor dispersion, and vapor suppression); purpose of, procedures for, required tools and equipment for, and safety precautions for hazardous materials/WMD control techniques; location and operation of remote emergency shutoff devices; characteristics, applicability, and use of approved product control agents; use of approved tools and equipment; and procedures for inspection and maintenance of tools and equipment.			
11.4.3.1(A)	X		
11.4.3.1(B) Requisite Skills. Selecting and using PPE; selecting and using approved control agents and equipment on a release involving hazardous materials/WMD, using container control valves and remote emergency shutoff devices, performing product control techniques, inspecting and maintaining tools and equipment; and completing required and supporting documentation for product control operations.			
11.4.3.1(B)		X	X
11.4.3.2 Control leaks from containers and their closures at a hazardous materials/WMD incident, given three scenarios, including (1) a leak from a bulk or nonbulk pressure container or its closures, (2) a leak from a nonbulk liquid container or its closures, and (3) a leak from a bulk liquid container or its closures; an assignment; results of the incident analysis; policies and procedures for controlling leaks from containers and/or their closures; and approved tools, equipment, and PPE, so that an approved product control technique is selected and used; approved PPE is selected and used; exposures and personnel are protected; safety procedures are followed; hazards are avoided or minimized; hazard monitoring is completed; leaks are controlled (confined or contained); emergency responders, tools, and equipment			

used are decontaminated; tools and equipment are inspected and maintained; and product control operations are reported and documented.			
11.4.3.2		X	X
11.4.3.2(A) Requisite Knowledge. Types of PPE and the hazards for which they are used; policies and procedures for product control; types of containers and their closures; ways in which containers and their closures develop leaks and the hazards of and safety precautions for controlling; container/closure leaks; methods for controlling and containing container, closure, or fitting leaks on pressure and liquid nonbulk, intermediate bulk, radioactive, and facility containers, and pipe and pipelines including patching, plugging, repositioning the container, sealing closures, closing remote shutoffs and open valves, replacing and tightening loose plugs, and replacing missing plugs; location and operation of remote emergency shutoff devices on cargo tanks and at facilities; characteristics, applicability, and use of approved product control agents; approved tools and equipment used to control container/closure leaks; and procedures for inspection and maintenance of tools and equipment.			
11.4.3.2(A)	X		
11.4.3.2(B) Requisite Skills. Selecting and using PPE; selecting and using approved control agents and equipment; controlling leaks on containers and their closures (patching, plugging, sealing closures, remote valve shutoff, closing valves, repositioning container; replacing missing plugs, and tightening loose fittings); decontaminating tools and equipment; inspecting and maintaining tools and equipment; and requirements for reporting and documenting product control operations.			
11.4.3.2(B)		X	X
	Knowledge-Based Assessments (graded after submission)		**Performance-Based Assessments** (graded in real-time as they are performed)
Section	**Cognitive** (e.g. Multiple Choice, Short Answer, Discretionary Time with Resources)	**Product** (e.g., document or develop a budget, proposal, lesson plan)	**Psychomotor** (Primarily an observable physical task. e.g., don, doff)	**Process** (Primarily a mental or verbalized task. e.g., inspect)
11.4.3.3 Overpack damaged or leaking nonbulk and radioactive materials containers at a hazardous materials/WMD incident, given a hazardous materials/WMD incident; an assignment; results of the incident analysis; a loaded damaged or leaking container; a suitable overpack container; policies and procedures; and approved tools, equipment, and PPE, so that an approved overpack technique is selected; the damaged or leaking container is placed into a suitable overpack and the overpack is closed, marked, and labeled; approved PPE is selected and used; exposures and personnel are protected; safety			

procedures are followed; hazards are avoided or minimized; emergency responders, tools, and equipment are decontaminated; tools and equipment are inspected and maintained; and product control operations are reported and documented.			
11.4.3.3		X	X
11.4.3.3(A) Requisite Knowledge. Types of PPE and the hazards for which they are used; policies and procedures for overpacking damaged or leaking nonbulk and radioactive materials containers; ways in which nonbulk and radioactive materials containers are damaged; hazards associated with overpacking damaged or leaking nonbulk and radioactive materials containers; methods to overpack damaged or leaking nonbulk and radioactive materials containers; marking and labeling overpack containers; the tools and equipment used to overpack damaged or leaking nonbulk and radioactive materials containers; and equipment and maintenance procedures.			
11.4.3.3(A)	X		
11.4.3.3(B)Requisite Skills. Selecting and using PPE; placing a damaged or leaking nonbulk materials container into the overpack container;placing a damaged or leaking radioactive materials container into an overpack container; following safety procedures and minimizing and avoiding hazards; decontaminating tools and equipment; inspecting and maintaining tools and equipment; and completing requirements for reporting and documenting product control operations.			
11.4.3.3(B)		X	X
11.4.3.4 Transfer liquids from leaking nonpressure containers at a hazardous materials/WMD incident, given a hazardous materials/WMD incident; an assignment; results of the incident analysis; a leaking nonpressure container and a recovery container; policies and procedures for transferring liquids from leaking nonpressure containers; and approved tools, equipment, and PPE, so that an approved product transfer method is selected and used; approved PPE is selected and used; exposures and personnel are protected; safety procedures are followed; hazards are avoided or minimized; hazard monitoring is completed; the containers are bonded and grounded; product is transferred to the recovery container; emergency responders, tools, and equipment used are decontaminated; tools and equipment are inspected and maintained; and product control operations are reported and documented.			
11.4.3.4		X	X
11.4.3.4(A) Requisite Knowledge. Types of PPE and the hazards for which they are used; policies and procedures for liquid product transfer; identifying a compatible recovery container; requirements for hazard monitoring; methods for transferring liquid product; grounding and bonding methods; methods for vapor suppression; use of approved tools and equipment; procedures for inspection and maintenance of tools and equipment according to the manufacturer’s specifications and recommendations and AHJ policies and procedures; and requirements for reporting and documenting product control operations.			

11.4.3.4(A)	X		
11.4.3.4(B) Requisite Skills. Selecting and using PPE; identifying a compatible recovery container and transfer equipment; monitoring for hazards; grounding and bonding containers; transferring liquid product from a leaking container to a recovery container; suppressing vapors; decontaminating tools and equipment; inspecting and maintaining tools and equipment; and completing reports and supporting documentation for product control operations.			
11.4.3.4(B)		X	X
11.4.4.1 Rescue an incapacitated entry team member from the hot zone, given a hazardous materials/WMD incident; an assignment within a backup team; communication of an entry team emergency; and approved tools, equipment, including special rescue equipment, and PPE; so that safety procedures are followed and the entry team member is removed from the hot zone, decontaminated, PPE doffed, and delivered into the care of EMS.			
11.4.4.1			X
11.4.4.1(A) Requisite Knowledge. Types of PPE and the hazards for which they are used, policies and procedures for conducting rescues, roles and responsibilities of backup team members, entry team emergency communication procedures, rescue tools and equipment, rescue prioritization, rescue methods and procedures of personnel in PPE, doffing PPE in an emergency, and emergency decontamination procedures.			
11.4.4.1(A)	X		
11.4.4.1(B) Requisite Skills. Identifying rescue situations, prioritizing rescues, selecting proper rescue options, using rescue tools and equipment, moving personnel in PPE, conducting rescues, doffing rescued personnel’s PPE, and conducting emergency decontamination.			
11.4.4.1(B)			X
11.4.4.2 Perform rescue and recovery operations at a hazardous materials/WMD incident, given a hazardous materials/WMD incident involving exposed and/or contaminated victims; an assignment; scope of the problem; policies and procedures; approved tools, equipment, including special rescue equipment, and PPE; and access to an emergency response plan, or standard operating procedures so that the feasibility of conducting a rescue or a recovery operation is determined; approved PPE is selected and used; exposures and personnel are protected; safety procedures are followed; hazards are avoided or minimized; rescue or recovery tactics are selected within the capabilities of available personnel, approved tools, equipment, special rescue equipment, and PPE; victims are rescued or recovered; victims are prioritized and patients are triaged and transferred to the decontamination group, casualty collection			

point, area of safe refuge, or medical care in accordance with the IAP; personnel, victims, and equipment used are decontaminated; and victim rescue and recovery operations are reported and documented.			
11.4.4.2		X	X
11.4.4.2(A) Requisite Knowledge. Types of PPE and the hazards for which they are used; capabilities and limitations of approved PPE; importance of working under the guidance of an emergency response plan or standard operating procedures; the difference between victim rescue and victim recovery; victim prioritization and patient triage methods; considerations for determining the feasibility of rescue or recovery operations; policies and procedures for implementing rescue and recovery; capabilities and limitations of approved PPE; procedures, specialized rescue equipment required, and incident response considerations for rescue and recovery in the following situations: (1) line-of-sight with ambulatory victims, (2) line-of-sight with nonambulatory victims, (3) non-line-of-sight with ambulatory victims, (4) non-line-of-sight with nonambulatory victims, and (5) victim rescue operations versus victim recovery operations; AHJ's rescue team positions, roles, and responsibilities; and procedures for reporting and documenting victim rescue and recovery operations.			
11.4.4.2(A)	X		
11.4.4.2(B) Requisite Skills. Identifying both rescue and recovery situations; victim prioritizing and patient triaging; selecting proper rescue or recovery tactics; using available specialized rescue equipment; selecting and using PPE for the victim and the rescuer; searching for, rescuing, and recovering victims; following the AHJ's procedures for decontamination of rescue/recovery personnel and their equipment; and completing required reports and supporting documentation for victim rescue and recovery operations.			
11.4.4.2(B)		X	X
11.4.5.1 Perform mass decontamination for ambulatory and nonambulatory victims at a hazardous materials/WMD incident, given a hazardous materials/WMD incident requiring mass decontamination; an assignment; results of the incident analysis; policies and procedures; and approved PPE, tools, and equipment, so that PPE is selected and used; a mass decontamination procedure is selected, set up, implemented, evaluated, and terminated; victims are decontaminated; exposures and personnel are protected; safety procedures are followed; hazards are avoided or minimized; personnel, tools, and equipment are decontaminated; and mass decontamination operations are terminated, reported, and documented.			
11.4.5.1		X	X
11.4.5.1 (A) Requisite Knowledge. Types of PPE and the hazards for which they are used; advantages and limitations of operations and methods of mass decontamination; policies and procedures for mass decontamination; approved tools, equipment, and PPE; procedures for performing mass decontamination; safety precautions; crowd management techniques; AHJ mass decontamination unit duties within the			

command structure; termination of mass decontamination operations; and required reports and supporting documentation for mass decontamination operations.			
11.4.5.1(A)	X		
11.4.5.1(B) Requisite Skills. Selecting and using suitable PPE, selecting a mass decontamination procedure to minimize the hazard, setting up and implementing mass decontamination operations for ambulatory and nonambulatory victims, evaluating the effectiveness of the mass decontamination process, terminating mass decontamination operations, and completing reporting and documentation requirements.			
11.4.5.1(B)		X	X
11.4.5.2 Establish and implement technical decontamination in support of entry operations and for ambulatory and nonambulatory victims at a hazardous materials/WMD incident, given a hazardous materials/WMD incident requiring technical decontamination; an assignment; results of the incident analysis; policies and procedures for technical decontamination; and approved PPE, tools, and equipment, so that approved PPE is selected and used; a technical decontamination procedure is selected, set up, implemented, evaluated, and terminated; victims are decontaminated; safety procedures are followed; hazards are avoided or minimized; if contaminated, personnel, tools, and equipment are decontaminated; technical decontamination operations are terminated; and all reports and documentation of technical decontamination operations are completed.			
11.4.5.2		X	X
11.4.5.2(A) Requisite Knowledge. Types of PPE and the hazards for which they are used; advantages and limitations of operations and methods of technical decontamination; policies and procedures; approved tools, equipment, and PPE; procedures for performing technical decontamination; safety precautions; crowd management techniques; technical decontamination unit duties within the command structure; termination of technical decontamination operations; and approved forms for reporting and documenting technical decontamination.			
11.4.5.2(A)	X		
11.4.5.2(B) Requisite Skills. Selecting and using PPE, selecting a technical decontamination procedure to minimize the hazard, setting up and implementing technical decontamination operations, evaluating the effectiveness of the technical decontamination procedure, terminating technical decontamination operations, and completing required reports and supporting documentation for technical decontamination operations.			
11.4.5.2(B)		X	X

11.5.1 Evaluate and report the progress of assigned tasks at a hazardous materials/WMD incident, given a hazardous materials/WMD incident, results of the incident analysis, an assignment, current incident conditions, tactics taken, and approved communication equipment, so that the actual behavior of material and container is compared to that predicted, the effectiveness of the tactics taken in accomplishing the strategy is determined, modifications to the strategies and tactics are made, and the results are communicated.				
11.5.1			X	
11.5.1 (A) Requisite Knowledge. Procedures for evaluating whether the strategies and tactics are effective in accomplishing the strategies; resources for identifying improving, static, or deteriorating conditions; approved communication procedures and communication equipment; and the process for modifying tactics.				
11.5.1(A)	X			
	Knowledge-Based Assessments (graded after submission)		**Performance-Based Assessments** (graded in real-time as they are performed)	
Section	**Cognitive** (e.g. Multiple Choice, Short Answer, Discretionary Time with Resources)	**Product** (e.g., document or develop a budget, proposal, lesson plan)	**Psychomotor** (Primarily an observable physical task. e.g., don, doff)	**Process** (Primarily a mental or verbalized task. e.g., inspect)
11.5.1(B) Requisite Skills. Comparing predicted behavior of the material and its container to the actual behavior, determining effectiveness of tactics, communicating the status of tactics, and modifying the tactics based on the incident status review.				
11.5.1(B)			X	
11.6.1 Terminate a hazardous materials/WMD incident, given a hazardous materials/WMD incident, an assignment, policies and procedures, operational observations of response operations (incident information), and approved forms for documentation and reporting, so that assistance in scheduled incident debriefings and critiques is provided, and incident operations are reported and documented.				
11.6.1		X	X	
11.6.1(A) Requisite Knowledge. Purpose, regulatory issues, elements, and procedures for conducting debriefings and critiques; documentation and reporting requirements; approved forms and procedures for completing required reports, records, and supporting documentation; and importance of and				

requirements for reporting and documenting incident operations, including filing and maintenance requirements.			
11.6.1(A)	X		
11.6.1 (B) Requisite Skills. Communicating operational observations (incident information) at debriefings and critiques; and completing, forwarding, and filing required reports, records, and supporting documentation.			
11.6.1(B)		X	X