

Animals in Disaster

MODULE A
UNIT 10

Appendices

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Appendix A

Training available through FEMA

Independent study courses available through FEMA

Emergency Management, USA gives an introduction to disaster hazards and preparedness to the public. This course provides a good overview of many topics with which both the public and the emergency program manager should be familiar. This course provides detailed information on the distribution of natural hazards in the United States, how to prepare family plans and how to safeguard against common household hazards. Module A of the *Animals in Disasters* course is based on *Emergency Management, USA*.

The Emergency Program Manager: An Orientation to the Position is designed to provide the basics of the job for the emergency program manager. Module B of the *Animals in Disasters* course is based on the Emergency Program Manager course.

A Citizen's Guide to Disaster Assistance provides a basic understanding of the roles and responsibilities of the local community, State, and the Federal government in providing disaster assistance. It is appropriate for both the general public and those involved in emergency management who need a general introduction to disaster assistance.

Hazardous Materials: A Citizens Orientation details how to identify and protect against hazardous materials. This course has a lot of useful information and is highly recommended for employees of all animal-related businesses.

Another independent study course that should be of interest for nuclear attack and fixed nuclear facility preparedness is called *Radiological Emergency Management*. Its subjects include fallout effects, exposure monitoring, and protective and decontamination measures. It also covers many other subjects that are relevant to workers in veterinary practices, where X-ray equipment and occasional radioisotopes are used for diagnostic tests.

Basic Incident Command System – The Incident Command System (ICS) is recognized as an effective system for managing emergencies. Several States have adopted ICS as their standard for emergency management, and others are considering adopting ICS. As ICS gains wider use, there is a need to provide training for those who are not first responders (i.e., law enforcement, fire, or emergency medical services personnel) who may be called upon to function in an ICS environment. This Basic Incident Command System (ICS) Course will begin to meet that need. The course has been developed as self-instruction but can also be delivered, with the use of an instructor, in a classroom. The course includes a large number of scenarios, examples, and opportunities for students to apply what they have learned.

Courses available at the Emergency Management Institute

| Title | Course number |
|---|---------------|
| Basic Public Information Course | G 290 |
| <i>Basic Skills in Emergency Management</i> | |
| Decision Making and Problem Solving | G 241 |
| Effective Communication | G 242 |
| Leadership and Influence | G 240 |
| Emergency Planning Course | G 235 |
| Exercise Design Course | G 120 |
| Exercise Evaluation Course | G 130 |
| Incident Command System/Emergency Operations Center Interface | G 191 |
| Introduction to Emergency Management | G 301 |

Appendix B

Recommendations on how to deal with contaminated water

If water contamination is suspected or known to have occurred, the water should be purified. There are three basic procedures for purifying water:

- ▶ Boiling,
- ▶ Purification tablets, and
- ▶ Bleach purification.

Boiling

Boiling is the safest method of purifying water. Bring water to a rolling boil for 10 minutes, keeping in mind that some water will evaporate. To improve taste, pour from one container to another several times.

Purification tablets

These tablets are available at most sporting goods and drug stores. Follow directions on the package. Usually one tablet is enough for one quart of water. For cloudy water double the dose.

Bleach purification

Liquid household bleach can also be used if the label lists sodium hypochlorite as the only active ingredient and there is no perfume (such as “lemon-scent”) in the bottle. Add bleach according to the table below, stir and let stand for 30 minutes. If the water does not taste and smell of chlorine after 30 minutes, add another dose and let stand for another 15 minutes. (Note: do not use this method to purify water to be used to fill a waterbed. Use a manufacturer provided purifier that will not harm the plastic).

| Amount of water | Amount of bleach | |
|-----------------|------------------|--------------|
| | Clear water | Cloudy water |
| 1 qt | 2 drops | 4 drops |
| 1 gal | 8 drops | 16 drops |
| 5 gal | ½ teaspoon | 1 teaspoon |

Appendix C

References

| Topic | Source | Material | Comments |
|--|--|--|--|
| Transport safety | Blue Green Publishing Company, PO Box 1255, Southern Pines, NC 28388 | Hawkins Guide on "Equine Emergencies" and "Horse Trailering on the Road" | |
| <ul style="list-style-type: none"> • Transportation safety for horses • How to rescue horses from wrecked trailers | Horse Park of New Jersey, PO Box 548, Allentown, NJ 08501 | Videotape on "Equine Trailer Rescue" | For both horse owners and emergency management personnel |
| Handling manure on farms | Midwest Plan Service. Iowa State University Press. Ames, Iowa. | Livestock Waste Facilities Handbook MWPS 18. 1985 | |

Others

Brownson R, Ames D. Winter Stress in Beef Cattle. Alberta Beef Herd Management. Alberta Agriculture, Calgary, Canada.

Publication 1461. Snow and wind control for farmstead and feedlot. Agriculture Canada. Calgary, Canada, 1978.

U.S. Pet Ownership and Demographics Sourcebook, Center for Information Management. American Veterinary Medical Association. Schaumburg, IL. 1997

Appendix D

Modified Mercalli Scale of Earthquake Intensities

| | Intensity | Characteristic Effect | Richter Scale Magnitude |
|------|-----------------|---|-------------------------|
| I | Instrumental | Detected only by seismography. | 3.5 – 4.2 |
| II | Feeble | Noticed only by sensitive people. | |
| III | Slight | Like the vibrations of a heavy truck passing, felt only by people at rest. | |
| IV | Moderate | Felt by people while walking. Objects rock, including standing vehicles. | |
| V | Rather Strong | Felt generally; most sleepers awakened. | 4.3 – 4.8 |
| VI | Strong | Trees sway, suspended objects swing, loose objects overturn or fall. | 4.9 – 5.4 |
| VII | Very Strong | General alarm. Walls crack, plaster falls. | 5.5 – 6.1 |
| VIII | Destructive | Masonry cracks, chimneys fall, poorly constructed buildings damaged, water levels may change. | 6.2 – 6.9 |
| IX | Ruinous | Some houses collapse where ground begins to crack; pipes break open. | |
| X | Disastrous | Disastrous ground cracks badly, many buildings destroyed and railway lines bent; landslides on steep slopes. | 7.0 – 7.3 |
| XI | Very Disastrous | Few buildings remain standing; bridges destroyed, all services (rail, pipelines and cables) out of action. Great landslides and floods. | 7.4 – 8.1 |
| XII | Catastrophic | Total destruction; objects thrown into the air; ground rises and falls in waves. | 8.1+ |

Appendix E

Wind Speed Measurement — Land and Water Comparison

| Wind Speed (mph) | Effects Over Water | Effects Over Land |
|---------------------|--|--|
| 1 – 3 | Ripples with appearance of fish scales. | Calm; smoke rises vertically. |
| 4 – 7 | Small wavelets; crests of glassy appearance. | Smoke drift indicates wind direction; vanes don't move. |
| 8 – 12 | Large wavelets; crests begin to break. | Wind felt on face; vanes begin to move. |
| 13 – 18 | Small waves; becoming longer; numerous whitecaps. | Leaves and small twigs in constant motion. |
| 19 – 24 | Moderate waves; becoming longer; numerous whitecaps. | Dust, leaves and loose paper rise up. |
| 25 – 31 | Larger waves forming; whitecaps everywhere. | Small trees begin to sway. |
| 32 – 38 | Water heaps up; white foam begins blowing in streaks. | Large branches move, whistling from wires. |
| 39 – 46 | Moderately high waves of greater length. | Twigs and small branches broken off trees. |
| 47 – 54 | High waves begin to roll; spray may reduce visibility. | Slight structural damage occurs; slate blown from roofs. |
| 55 – 63 | Very high waves with overhanging crests. | Seldom experienced on land; trees broken, structural damage. |
| 64 – 72 | Exceptionally high waves; water covered with white foam. | Very rarely experienced on land; structural damage. |
| 73 or higher | Air filled with foam, water white, little visibility. | Violent action, massive destruction. |

Appendix F

Wind Chill Measurement Table

| Wind Data | | Equivalent Temperature (Fahrenheit) Locate temperature on top row, find wind data on left. Cross reference matrix to see wind chill factor. | | | | | | | | | | | | | | |
|----------------|-----|---|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| Wind Speed mph | 0-5 | 35 | 30 | 25 | 20 | 15 | 10 | 5 | 0 | -5 | -10 | -15 | -20 | -25 | -30 | -35 |
| | 5 | 32 | 27 | 22 | 16 | 11 | 6 | 0 | -5 | -10 | -15 | -21 | -26 | -31 | -36 | -42 |
| | 10 | 22 | 16 | 10 | 3 | -3 | -9 | -15 | -22 | -27 | -34 | -40 | -46 | -52 | -58 | -64 |
| | 15 | 16 | 9 | 2 | -5 | -11 | -18 | -25 | -31 | -38 | -45 | -51 | -58 | -65 | -72 | -78 |
| | 20 | 12 | 4 | -3 | -10 | -17 | -24 | -31 | -39 | -46 | -53 | -60 | -67 | -74 | -81 | -88 |
| | 25 | 8 | 1 | -7 | -15 | -22 | -29 | -36 | -44 | -51 | -59 | -66 | -74 | -81 | -88 | -96 |
| | 30 | 6 | -2 | -10 | -18 | -25 | -33 | -41 | -49 | -58 | -64 | -71 | -79 | -86 | -93 | -101 |
| | 35 | 4 | -4 | -12 | -20 | -27 | -35 | -43 | -52 | -56 | -67 | -74 | -82 | -89 | -97 | -105 |
| | 40 | 3 | -5 | -13 | -21 | -29 | -37 | -45 | -53 | -60 | -69 | -76 | -84 | -92 | -100 | -107 |
| | 45 | 2 | -6 | -14 | -22 | -30 | -38 | -46 | -54 | -62 | -70 | -78 | -85 | -93 | -102 | -109 |

Appendix G

Wind Speed Matrix

Formula

$$T = (D \times 5280) / (S \times 5280 / 60)$$

T = Time to reach observer

D = Distance (miles)

S = Wind Speed/Velocity (mph)

| Wind Speed (mph) | Distance from location of observer | | | | | | |
|------------------|------------------------------------|-----------|-----------|-----------|-----------|----------|---------|
| | 60 miles | 50 miles | 40 miles | 30 miles | 20 miles | 10 miles | 5 miles |
| 70 | 51.42 min | 42.86 min | 34.28 min | 25.71 min | 17.14 min | 8.57 min | 4.3 min |
| 60 | 60 min | 50 min | 40 min | 30 min | 20 min | 10 min | 5 min |
| 50 | 72 min | 60 min | 48 min | 36 min | 24 min | 12 min | 6 min |
| 40 | 90 min | 75 min | 60 min | 45 min | 30 min | 15 min | 7.5 min |
| 30 | 120 min | 100 min | 80 min | 60 min | 40 min | 20 min | 10 min |
| 20 | 3 hr | 2.5 hr | 120 min | 90 min | 60 min | 30 min | 15 min |
| 10 | 6 hr | 5 hr | 4 hr | 3 hr | 120 min | 60 min | 30 min |
| 5 | 12 hr | 10 hr | 8 hr | 6 hr | 4 hr | 126 min | 60 min |
| 4 | 15 hr | 12.5 hr | 10 hr | 7.5 hr | 5 hr | 2.5 hr | 75 min |
| 3 | 20 hr | 16.6 hr | 13.3 hr | 10 hr | 6.7 hr | 3.3 hr | 100 min |
| 2 | 30 hr | 25 hr | 20 hr | 15 hr | 10 hr | 5 hr | 2.5 hr |
| 1 | 60 hr | 50 hr | 40 hr | 30 hr | 20 hr | 10 hr | 5 hr |

Appendix H

Learning Checks Answer Key

| | | |
|--|---|---|
| <p>Unit 2 Answer/Page</p> <ol style="list-style-type: none"> 1. True/A-2-1 2. False/A-2-2 3. True/A-2-2 4. True/A-2-4 5. False/A-2-4, A-2-7 6. False/A-2-7 7. False/A-2-7 8. True/A-2-7 9. B/A-2-2 10. C/A-2-6 | <p>Unit 3 Answer/Page</p> <ol style="list-style-type: none"> 1. False/A-3-4 2. False/A-3-6 3. True/A-3-4 4. True/A-3-8 5. False/A-3-6 6. False/A-3-4 7. D/A-3-4 8. A/A-3-5 9. A/A-3-6 10. Personal, Local, State, Federal/A-3-10 | <p>Unit 4 Thunderstorms Answer/Page</p> <ol style="list-style-type: none"> 1. True/A-4-2 2. True/A-4-2 3. False/A-4-3 4. True/A-4-3 5. True/A-4-4 6. False/A-4-4 7. True/A-4-5 8. D/A-4-2 9. D/A-4-3 10. A/A-4-4 |
| <p>Unit 4 Floods Answer/Page</p> <ol style="list-style-type: none"> 1. False/A-4-11 2. True/A-4-7 3. True/A-4-12 4. True/A-4-12 5. False/A-4-10 6. True/A-4-12 7. False/A-4-10 8. C/A-4-7 9. B/A-4-8 10. D/A-4-11 | <p>Unit 4 Tornadoes Answer/Page</p> <ol style="list-style-type: none"> 1. False/A-4-18 2. True/A-4-15 3. False/A-4-16 4. True/A-4-15 5. True/A-4-16 6. True/A-4-16 7. True/A-4-17 8. True/A-4-16 9. D/A-4-14 10. B/A-4-17 | <p>Unit 4 Hurricanes Answer/Page</p> <ol style="list-style-type: none"> 1. True/A-4-19 2. True/A-4-22 3. False/A-4-23 4. False/A-4-19 5. True/A-4-22 6. False/A-4-19 7. D/A-4-19 8. C/A-4-20 9. D/A-4-20 10. B/A-4-20 |
| <p>Unit 4 Winter Storms Answer/Page</p> <ol style="list-style-type: none"> 1. False/A-4-29 2. True/A-4-29 3. True/A-4-30 4. False/A-4-28 5. True/A-4-27 6. False/A-4-29 7. False/A-4-30 8. C/A-4-26 9. B/A-4-26 10. D/A-4-26 | <p>Unit 4 Heat and Droughts Answer/Page</p> <ol style="list-style-type: none"> 1. False/A-4-34 2. True/A-4-34 3. False/A-4-34 4. True/A-4-34 5. False/A-4-35 6. True/A-4-34 7. False/A-4-34 8. True/A-4-35 9. C/A-4-34 11. B/A-4-33 | <p>Unit 4 Wildfires Answer/Page</p> <ol style="list-style-type: none"> 1. False/A-4-37 2. True/A-4-38 3. True/A-4-37 4. False/A-4-40 5. False/A-4-39 6. True/A-4-40 7. True/A-4-40 8. False/A-4-39 9. A/A-4-40 10. B/A-4-37 |

| | | |
|---|--|---|
| Unit 5 Landslides Answer/Page 1. True/A-5-3 2. True/A-5-2 3. False/A-5-3 4. True/A-5-2 5. True/A-5-1 6. True/A-5-1 7. False/A-5-3 8. True/A-5-4 9. C/A-5-2 10. A/A-5-1 | Unit 5 Earthquakes Answer/Page 1. False/A-5-6 2. False/A-5-9 3. True/A-5-8 4. False/A-5-9 5. False/A-5-9 6. True/A-5-10 7. False/A-5-10 8. False/A-5-10 9. C/A-5-8 10. C/A-5-6 | Unit 5 Tsunamis Answer/Page 1. True/A-5-12 2. False/A-5-12 3. False/A-5-12 4. False/A-5-12 5. True/A-5-12 6. False/A-5-12 7. True/A-5-13 8. A/A-5-12 9. D/A-5-12 10. B/A-5-13 |
| Unit 5 Volcanoes Answer/Page 1. True/A-5-17 2. False/A-5-16 3. False/A-5-16 4. True/A-5-16 5. True/A-5-16 6. False/A-5-15 7. True/A-5-17 8. D/A-5-16 9. D/A-5-16 10. B/A-5-16 | Unit 6 Hazardous Materials Answer/Page 1. False/A-6-1 2. False/A-6-2 3. True/A-6-2 4. False/A-6-3 5. True/A-6-3 6. True/A-6-3 7. False/A-6-3 8. C/A-6-2 9. A/A-6-4 10. B/A-6-5 | Unit 6 Radiation Answer/Page 1. True/A-6-8 2. True/A-6-10 3. False/A-6-10 4. True/A-6-10 5. True/A-6-11 6. True/A-6-12 7. False/A-6-10 8. D/A-6-7 9. C/A-6-9 10. D/A-6-9 |
| Unit 7 Answer/Page 1. False/A-7-2 2. True/A-7-2 3. True/A-7-2, A-7-5 4. True/A-7-7 5. False/A-7-8 6. False/A-7-9 7. False/A-7-2 8. False/A-7-5 9. D/A-7-6 10. D/A-7-8 | Unit 8 Answer/Page 1. False/A-8-4 2. True/A-8-5 3. True/A-8-6 4. False/A-8-3 5. False/A-8-9 6. True/A-8-9 7. False/A-8-5 8. B/A-8-3 9. D/A-8-9 10. C/A-8-6 | |

Appendix I

FEMA-Related Acronyms

| | |
|----------|---|
| ARC | American Red Cross |
| AVMA | American Veterinary Medical Association |
| CA | Cooperative Agreement |
| CBRA | Coastal Barrier Resources Act |
| CDBG | Community Development Block Grant |
| CDC | Centers for Disease Control and Prevention |
| CDRG | Catastrophic Disaster Response Group |
| CEM | Comprehensive Emergency Management |
| CERT | Community Emergency Response Team |
| CFR | Code of Federal Regulations |
| CHEMTREC | Chemical Transportation Emergency Center |
| COE | Corps of Engineers |
| COG | Continuity of Government |
| CRS | Community Rating System |
| CSDP | Chemical Stockpile Disposal Program |
| CSEPP | Chemical Stockpile Emergency Preparedness Program |
| DAE | Disaster Assistance Employee |
| DCO | Defense Coordinating Officer |
| DFIRM | Digital Flood Insurance Rate Map |
| DFO | Disaster Field Office |
| DHO | Disaster Housing Assistance |
| DOD | Department of Defense |
| DOT | Department of Transportation |

| | |
|-------|--|
| DRC | Disaster Recovery Center |
| DRM | Disaster Recovery Manager |
| DRO | Disaster Recovery Operations |
| DSR | Damage Survey Report |
| DUA | Disaster Unemployment Assistance |
| EAP | Emergency Action Plan |
| EAS | Emergency Alert System |
| EDA | Economic Development Act |
| EENET | Emergency Education NETWORK |
| EMERS | Emergency Management Exercise Reporting System |
| EMI | Emergency Management Institute |
| EMS | Emergency Medical Services |
| EMT | Emergency Management Training |
| EOC | Emergency Operations Center |
| EOP | Emergency Operations Plan |
| EPA | Environmental Protection Agency |
| ERT | Emergency Response Team |
| ESF | Emergency Support Function |
| EST | Emergency Support Team |
| FCO | Federal Coordinating Officer |
| FDA | Food and Drug Administration |
| FEMA | Federal Emergency Management Agency |
| FHA | Farmer's Home Administration |
| FIA | Federal Insurance Administration |
| FIRM | Federal Insurance Rate Map |
| FRERP | Federal Radiological Emergency Response Plan |
| FRP | Federal Response Plan |
| FRS | Field Reporting System |

| | |
|-------|---|
| GAR | Governor's Authorized Representative |
| GIS | Geographic Information Systems |
| HM | Hazard Mitigation |
| HMRT | Hazard Mitigation Response Team |
| IC | Incident Commander |
| ICS | Incident Command System |
| IEMC | Integrated Emergency Management Course |
| IEMS | Integrated Emergency Management System |
| IFGP | Individual and Family Grant Program |
| IHMT | Interagency Hazard Mitigation Team |
| JIC | Joint Information Center |
| LEPC | Local Emergency Planning Committee |
| MOA | Memorandum of Agreement |
| MOU | Memorandum of Understanding |
| MWEAC | Mount Weather Emergency Assistance Center |
| NACA | National Agricultural Chemical Association |
| NAWAS | National Warning System |
| NEP | National Earthquake Loss Reduction Program |
| NEPA | National Environmental Policy Act |
| NETC | National Emergency Training Center |
| NFA | National Fire Academy |
| NFIP | National Flood Insurance Program |
| NGA | National Governors' Association |
| NOAA | National Oceanic and Atmospheric Administration |
| NPSC | National Processing Services Center |
| NRC | Nuclear Regulatory Commission |

| | |
|--------|--|
| NRT | National Response Team |
| NTC | National Teleregistration Center |
| OES | Office of Emergency Services |
| OSHA | Occupational Safety and Health Administration |
| PDA | Preliminary Damage Assessment |
| PIO | Public Information Officer |
| RACES | Radio Amateur Civil Emergency Services |
| REP | Radiological Emergency Preparedness |
| RERO | Radiological Emergency Response Operations |
| ROC | Regional Operations Center |
| RRT | Regional Response Team |
| SARA | Superfund Amendment and Reauthorization Act |
| SBA | Small Business Administration |
| SCM | Survivable Crisis Management |
| SCO | State Coordinating Officer |
| SHMO | State Hazard Mitigation Officer |
| SITREP | Situation Report |
| SLE | State and Local Exercise |
| SLG | State and Local Guide |
| SOPs | Standard Operating Procedures |
| SPCA | Society for the Prevention of Cruelty to Animals |
| USDA | U.S. Department of Agriculture |
| USFA | U.S. Fire Administration |
| US&R | Urban Search and Rescue |
| VMAT | Veterinary Medical Assistance Team |
| VOLAG | Volunteer Agency |

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