



charles lowe

Chapter 10

How Can Following Procedures Help the Radiographer?

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Preface

- **Written procedures.**
- **Operating and Emergency Manual.**
- **Recognizing an emergency.**

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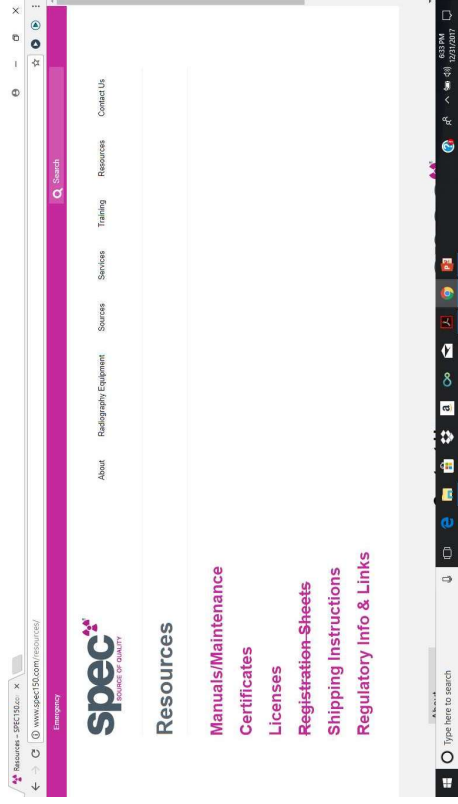
Preface

- Refer to your supervisor or RSO for questions or advice prior to taking next steps.
- Listen and Learn.

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Operating Procedures

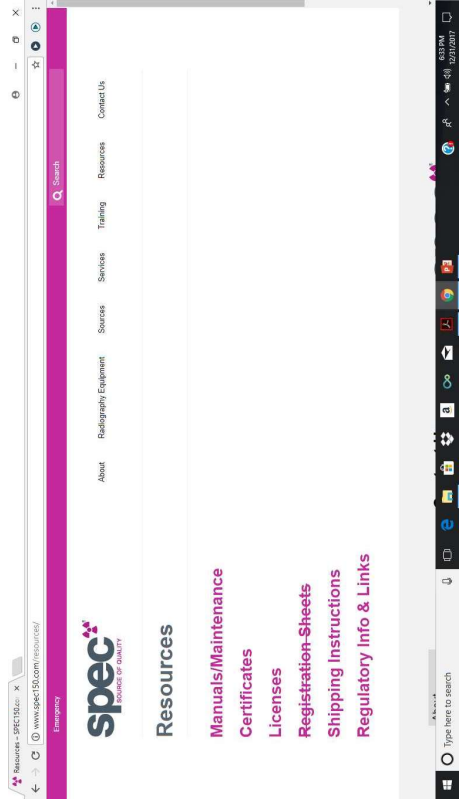
- Many topics relative to safety, how to use equipment, etc.
- Operating procedures are reviewed by licensing agency.



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Operating Procedures

- How to operate exposure device?
- How to operate survey meter?
- How to operate rate alarm meter?
- Etc.



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Operating Procedures

- Licensee will test you over their Operating Procedures.
- Operating Procedures are accessible to you at office and mobile unit.

WITHHOLD FROM PUBLIC DISCLOSURE UNDER 10 CFR 2.390 AND
TEXAS GOVERNMENT CODE 552.101

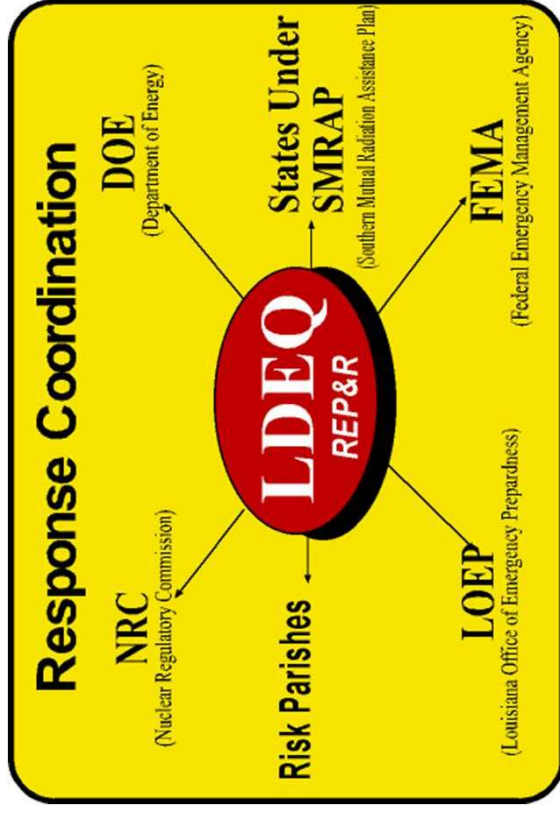
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Emergency Procedures

- Many topics relative to emergencies, such as accidents, overexposures, etc.
- Emergency Procedures are reviewed by licensing agency.

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Emergency Procedures

- Licensee will test you over their Emergency Procedures.
- Emergency Procedures are accessible to you at office and mobile unit.

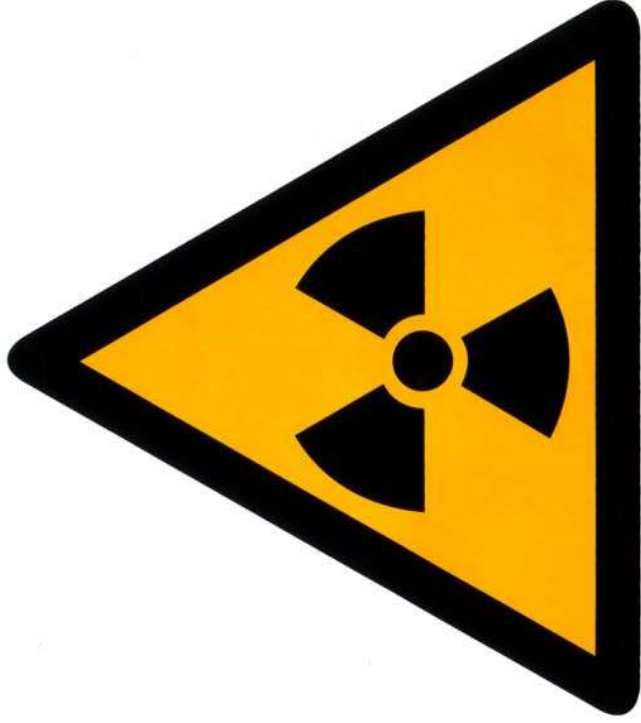
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Radiological Emergencies

- Overexposure to whole body or part of body.
- Dosimeter goes off scale.
- Crimped source guide tube.
- Etc.

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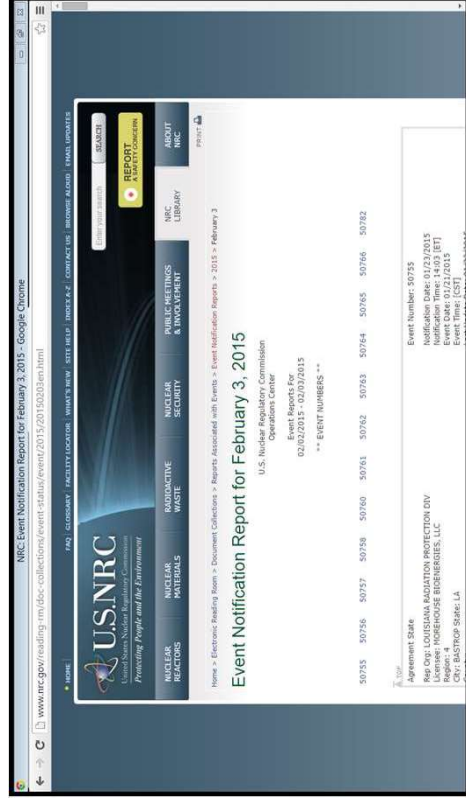
Recognizing the Emergency

- First step...recognize warning signs.
- Failing to know warning signs may effect health and safety.

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Recognizing the Emergency

- Instructor will simulate emergency situations you may face working in the field using RAM.
- Instructor will explain the emergency.



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Working Safely in Radiography

Immediate Response

What should be done if a source is exposed? Once it is recognized that an emergency exists, there is usually plenty of time to make a correct judgment.

First, move away from the exposed source and keep other people away. Just a few yards reduces radiation levels considerably. For a 3.7 TBq (100 Ci) iridium-192 source, moving just 3.0 m or 4.6 m (10 ft or 15 ft) away reduces the radiation level to roughly 40 mSv/h (4 rem/h). The worst thing to do is to touch the source with a hand. Don't try to put the source back into the camera by hand or reconnect it to the drive cable by hand. Touching a 3.7 TBq (100 Ci) iridium-192 source causes radiation burns in seconds.

Second, relax, remain calm, think and don't panic. When a few yards away from the source, there is time to think about what to do. Don't panic if the source cannot be immediately shielded.

Third, establish a restricted area and make sure no one approaches the source. Rope off the area, if possible, if this has not already been done. Use the survey meter to ensure the restricted area has been properly roped off.

Fourth, call for help, but don't leave an exposed source unattended. If there is no one there to help, remain in the area if possible, but not too close to the source. Sooner or later someone will come along. A radiographer

should not try to do anything he is not trained to do.

1. Move away from the source at once.
2. Calm down and think.
3. Establish restricted area.
4. Call for help.

For any emergency, it is important to know who to call for help. A common requirement of emergency procedures is to contact the employer's radiation safety officer.

If the police are contacted, it is important to provide as much information and assistance as possible. The radiographer will usually have the most knowledge of the situation and will be a key person for others to talk to.

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Immediate Response

- Move away.
- Remain calm.
- Re-establish safety perimeters.
- Call for help. Don't leave area unattended.
- Await further instructions.

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Working Safely in Radiography

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Call for Help

- Contact RSO.
- ARSO.
- Corporate.
- State.
- US NRC.
- Etc.

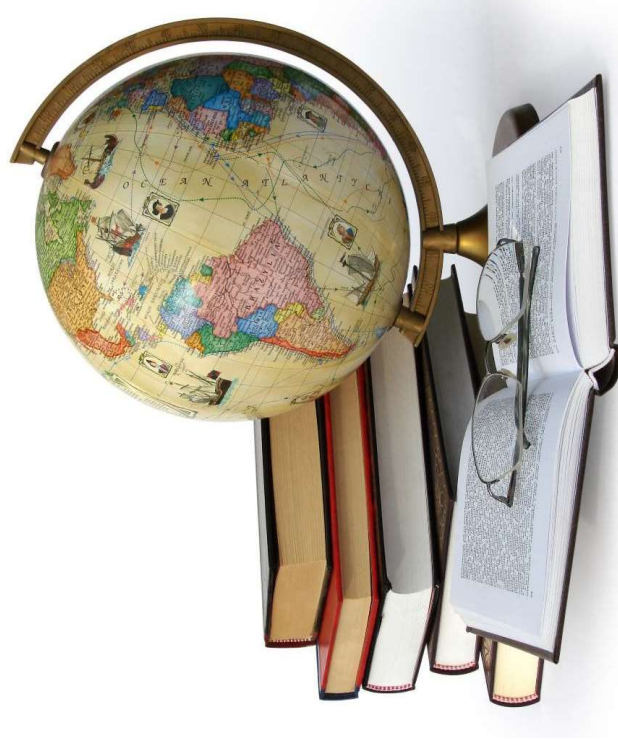
Immediate Response:

You're inspecting welds using 80 curies of Ir-192. You can not retract the source back into the shielded position nor extract source back into the collimator. The source is stuck in the guide tube!! How far from the source shall you place your Restricted Area signs from the source? Hurry! It's an emergency!!

Immediate Response:

You and you're Level 2 are traveling home after working on the pipeline for the day. All of a sudden you're truck is in a serious wreck. You are awake and you're Level 2 is unconscious. What should you do?

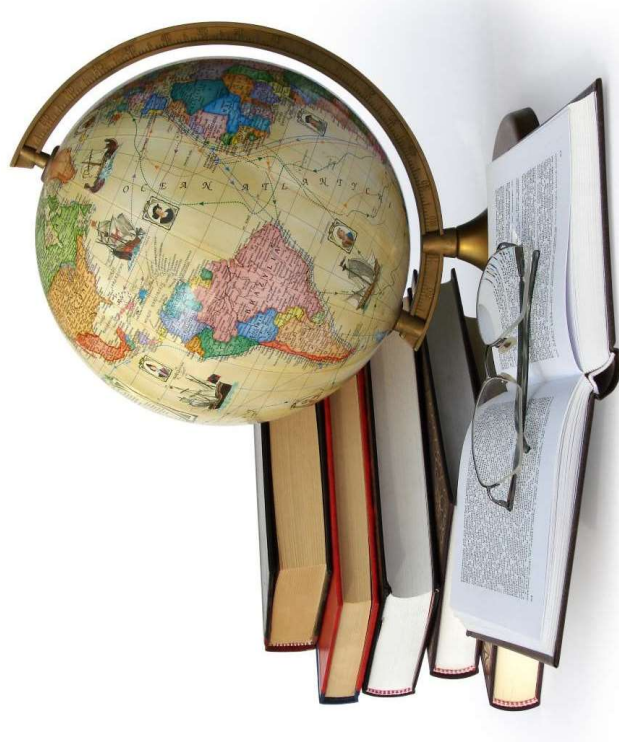
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Making Sense of It All

- Operating and Emergency Procedures.
- Reviewed by licensing agency.
- Company and you must follow O&E procedures.

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Making Sense of It All

- Recognizing the emergency.
- Immediate response.

Quiz 2 of 8:

How do I know the topics and information in the O&E Manual are true and correct.

The agency issuing the RAM license to the company has carefully reviewed the O&E Manual. The company is required to follow written procedures.

Quiz 3 of 8:

After an exposure is completed and you crank the source back into its shielded position, you approach the camera holding a survey meter. The survey meter reading continuously gets higher as you approach. What is happening?

This is a warning sign the source is NOT in its shielded position. Move away from the source.

Quiz 4 of 8:

After an exposure is completed and you crank the source back into its shielded position, you approach the camera holding a survey meter. The survey meter shows no reading, yet your rate alarm meter sounds an alarm. What is happening?

This is a warning sign the source is NOT in its shielded position. Move away from the source.

Quiz 5 of 8:

You experience a “source disconnect”. Why are safety perimeters re-established?

The source is unshielded and in an uncontrolled state until emergency retrieval is performed. To maintain dose regulations, safety perimeters must be pushed further back.

Quiz 6 of 8:

Are you allowed to perform an emergency source retrieval?

No. You must be trained, approved, and permitted by the company RSO to conduct source retrievals. Also, the licensing agency must approve you as well.

Quiz 7 of 8:

You claim to be highly experienced in mechanical work. Does this allow you to work on cameras?

No. You must be trained, approved, and permitted by the company RSO to perform any work on the cameras. Also, the licensing agency must approve you as well.

Quiz 8 of 8:

As you crank the source back into the shielded position you experience a “hang-up”. What do you do?

This is a warning sign the source can not be retracted to the shielded position. Move away and follow emergency procedures. (Students...recite the emergency procedures.)



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End of Chapter 10

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