



# ***“MASTERING THE EXAM”***

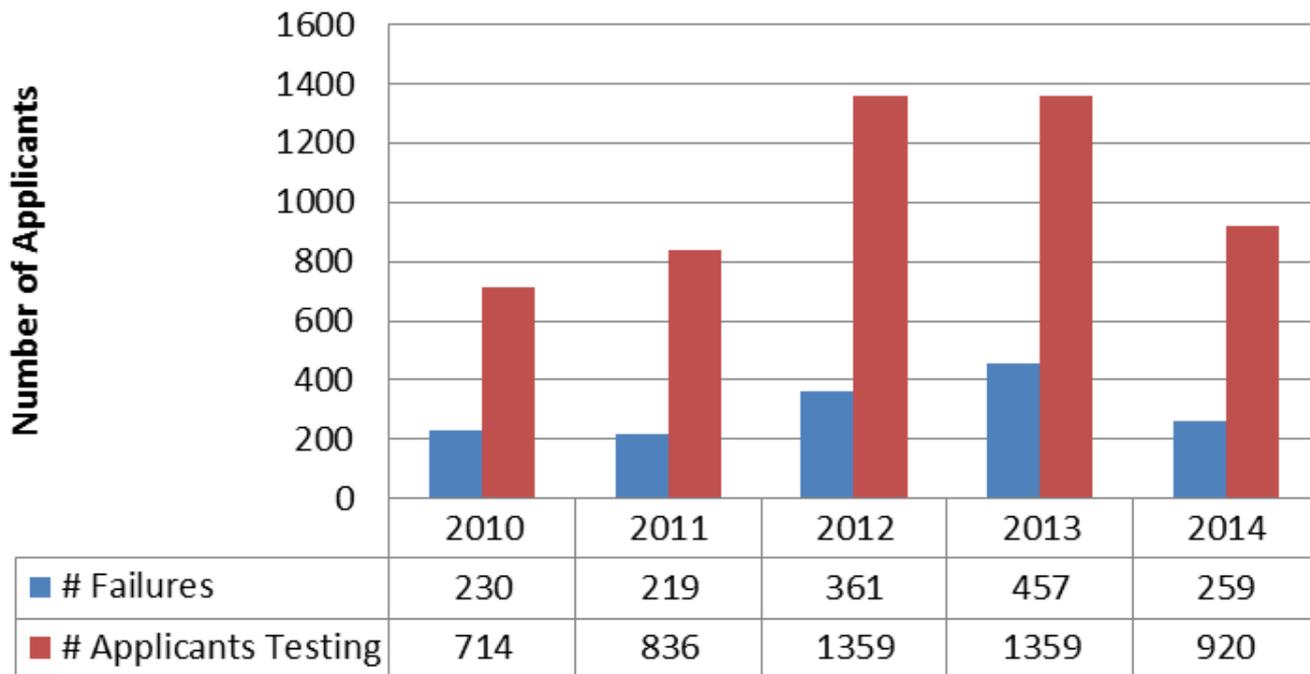
**Bridget D. Stephens  
Program Coordinator  
Industrial Radiographer Certification Program  
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# EXAM CATEGORIES

- **Radioactive Materials Only**
- **X-Ray Machines Only**
- **Combination (RAM and X-Ray)**

# EXAM FAILURE RATE

## Texas Exam Failure Rate (2010 -2014)



**Failure Rate = 29.4%**

# RADIATION FUNDAMENTALS

- Radiation Fundamentals – **56%**
  - characteristics of radiation
  - units of dose in rems (sieverts) and quantity of radioactivity in curies (becquerels)

# RADIATION FUNDAMENTALS

- Radiation Fundamentals – **56%**
  - significance of radiation dose to include:
    - (1) radiation protection standards
    - (2) biological effects of radiation dose
    - (3) hazards of exposure to radiation
    - (4) case histories of radiography accidents

# RADIATION FUNDAMENTALS

## ■ Radiation Fundamentals – 56%

- levels of radiation from sources of radiation
- methods of controlling radiation dose to include:
  - (1) working time
  - (2) working distances
  - (3) shielding

# CALCULATIONS

- Calculations – 43%
  - Half-Value Thickness for Ir-192 and Co-60
  - Half-Life for Ir-192 and Co-60
  - Radiation Intensity
  - Exposure Time

# RADIATION DETECTION INSTRUMENTATION

- Radiation Detection Instrumentation – **74%**
  - use, operation, calibration and limitations of radiation survey instruments
  - survey techniques
  - use of individual monitoring devices

# STATE AND FEDERAL REGULATIONS

- State and Federal Regulations – **60%**
  - Time interval requirements
  - Reporting requirements

# OPERATING, SAFETY AND EMERGENCY PROCEDURES

- Operating, Safety and Emergency Procedures
  - **76%**
    - handling and use of sources or radiation
    - methods to conduct radiation surveys
    - methods for controlling access

# OPERATING, SAFETY AND EMERGENCY PROCEDURES

- Operating, Safety and Emergency Procedures
  - **76%**
    - methods for locking and securing sources of radiation
    - personnel monitoring
    - methods of transport

# OPERATING, SAFETY AND EMERGENCY PROCEDURES

- Operating, Safety and Emergency Procedures
  - **76%**
    - methods to minimize exposure in the event of an accident
    - notification methods in the event of an accident
    - specific posting requirements

# OPERATING, SAFETY AND EMERGENCY PROCEDURES

- Operating, Safety and Emergency Procedures
  - **76%**
    - maintenance of records
    - inspection, maintenance and operational checks of equipment
    - testing and training methods
    - source recovery procedures

# RADIOGRAPHIC EQUIPMENT

- Radiographic Equipment – **73%**
  - remote handling equipment
  - operation and control of radiographic exposure devices and sealed sources, including pictures or models of source assemblies (pigtailed)

# RADIOGRAPHIC EQUIPMENT

- Radiographic Equipment – **73%**
  - storage and transport containers, source changers
  - operation and control of x-ray equipment

# RADIOGRAPHIC EQUIPMENT

- Radiographic Equipment – **73%**
  - collimators
  - storage, control and disposal of radioactive material
  - inspection and maintenance of equipment

# STUDY MATERIALS

- Request the 40 Hour Radiation Safety Training Course provide a study guide.

# IR WEBSITE



<http://www.dshs.state.tx.us/radiation>

**Exam Schedule, Information and Forms**

**Certification Requirements**

**Other Accepted Radiographer Certifications**

**Radiographer Certification Contact Numbers**

# QUESTIONS?

