



Type B(U) Licensing Issues

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Background



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➤ QSA Global manufactures sealed radioactive sources and devices for use in industrial radiography, oil well logging, medical brachytherapy, and gauging



Background



- Non spent fuel Type B(U) shipping packages
- Design, test, manufacture and ship eight different models of Type B(U) packages
- Uses only special form sources and no criticality issues

Background



- Have built and distributed more than 20,000 Type B(U) packages to date, build more than 500 packages a year - “production Type B”
- No failures of Type B package for more than 30 years

Packages



- Small robust packages for industrial radiography
 - Serves as both exposure device and shipping container
 - Harsh use environment
 - Meets ANSI/ISO standards for use
 - Used and shipped internationally



Packages



- Radiography device
 - 150 Ci Ir-192
 - 50 pounds
 - Special form source
 - Depleted uranium shield
 - 16" x 8"
 - Used and shipped daily



Packages



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- Source Changers
 - 240-1000 Ci Ir-192
 - Shipped daily
- Bulk Iridium package
 - 15,000
 - Ci Ir-192
 - 400 pounds



Packages



- Mobile, 600 pound device-

110 and 330 Ci Co-60 special form source

21"x 15"x 12"



Testing



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Old Designs



- Approval process has evolved since inception – now much more detail required
- In many cases don't have detailed specifications ie listed steel vs ASTM XX
- Old units were the tested units
"build what you test and test what you build"

Old Designs



- Need for continued service and replacement parts
- Currently adding more detail on replacement hardware, assuring still meet specifications of what was tested
- Adds significant costs

QA Aspects



- Have integrated graded approach of DG-6004 and NUREG/CR 6407 for QA program
- Although hold both the NRC QA program approval and Type B certificates, no apparent linkage between licensing and QA departments of NRC

QA Aspects



- Class A, B, or C of QA program vs licensing use of NITS or ITS
- Commercial dedication of components under QA program but not recognized in licensing reviews

Changes



- Many minor operational and safety improvements are delayed due to need for full amendment, even though no impact on testing
- Difficult to balance between level of detail on drawings to allow for future flexibility against NRC need for detail in performing safety evaluation

Next Steps



- Keep discussions open
- Consider different level of specifications for non spent fuel packages
- Maintain consistency between reviewers
- NRC and CNSC endorsements