



Regulation of Radiation Practices

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Processed >20,000 personal radiation badges since starting operations in 2005 with no equivalent dose >1 mSv p.a. (public dose limit)

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Risk-Based Regulation



- One size does not fit all
- “Sliding Scale” of radiation practices (Vics identified 171)
- Risk – inherent & residual, and frequency of practice
- Must maintain an element of flexibility/discretion

The Regulatory Burden



- “Fair and Reasonable” – Regulation is proportional to the risk
- Cost of licensing: Synchrotron, >\$10M on radiation protection infrastructure, ≈\$500k p.a. ongoing costs for radiation protection, \$36k p.a. license (previously ≈\$2k p.a.)
- Take accredited management systems into account & don’t duplicate effort
 - Quality: ISO 9001
 - Safety: AS 4801
 - Environmental: ISO 14001
 - Risk: ISO 31000
 - Auditors on site >50 days p.a.
- Maybe more practices should be exempted

The Regulator/License Holder Relationship



- Both want the same thing – safe radiation practices without any unnecessary burden
- “Carrot & Stick” – encourage reporting, but have the ability to act when poor practice is identified, and use that power (ref. Vics & public/private hospitals)
- Regulators cannot be technical experts in all radiation practices
- There must be **effective consultation** and a strong relationship to understand the risks and regulate appropriately
- Ref: the aviation industry

Synchrotron-Specific Examples



- Vic Gov (12,000+ licenses) vs. ARPANSA (a few licenses!)
- Plans & Arrangements – Safety Analysis Report
- Inspections (2 people ½ day vs. 4 people 5 days)

“Best Practice” Regulation of Radiation Practices



*“Pick important problems, fix them and tell everyone”,
Malcolm Sparrow, The Regulatory Craft*

- Humans are most often the weak link in safe radiation practices. Ongoing training is important
- Management-only licensing vs. Management & Use licensing (ref. ARPANSA requirement for a state-based use license)
 - Management – too far from the coal face? (ref. hospitals)
- Uniformity: Global – National – State
 - Australia should get it’s own house in order first
 - Lack of national uniformity is hampering the best outcomes for Australians
- Employee exchanges between ARPANSA and state regulators would be welcome
- Be clear as to what regulatory success is, and how it is measured

Questions?

