Quality Issues in Outsourcing Dosimetry

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Summary

- After 10-20 years of steady improvement in the quality of personnel dosimetry, we are slipping
- Over-reliance on vendor-provided dosimetry, without ownership, is compromising the integrity of results
- The ultimate responsibility for good dosimetry rests with the facility, not the vendor
- In-house or outsourced, good dosimetry relies on good **communication** between client and processor

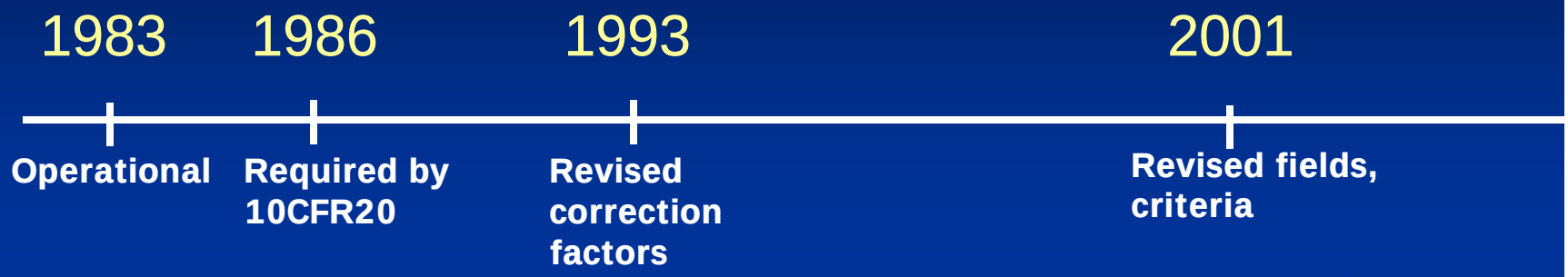
Trend summary

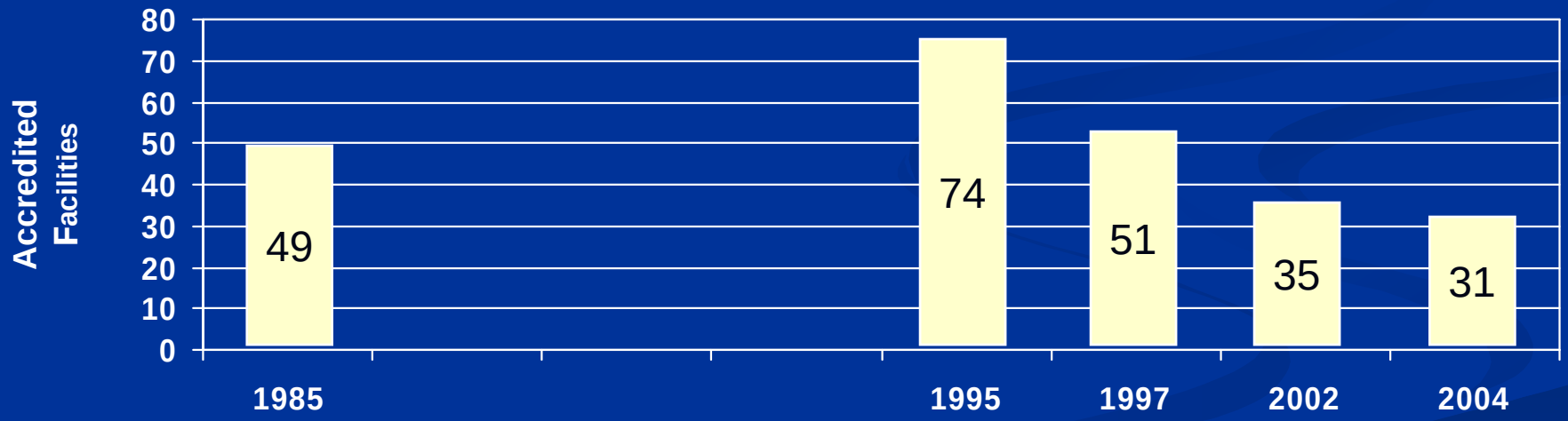
- Pre-1980
  - Most facilities used vendor dosimetry
- 1980's
  - Most facilities switched to in-house programs
    - Quality of materials and processing
    - Control of dosimetry
    - Fast turnaround
    - Site-specific application

Trend Summary (cont.)

- Late 1990's
  - Many facilities switching back to vendor dosimetry
    - Improved quality
    - State of the art materials and methods
    - Cost issues – accreditation, staffing, equipment
- 2005
  - NVLAP - 50% of nuclear facilities use vendor dosimetry
  - DOELAP – about 25% use vendor dosimetry

NVLAP Timeline





Data taken from NBS/NIST reports courtesy of B.A. Torres

What's the problem?

- Temptation to disown dosimetry
  - Over-reliance on vendor's accreditation
  - Less involvement in QA, dose review
- Less communication between user and processor
  - Facility understands less about dosimetry
  - Processor understands less about facility

Regulations

- NRC
  - 10 CRF 20
  - ANSI N13.11
  - NIST Handbook 150, 150-4
- DOE
  - 10 CFR 835
  - DOE/EH-0026
  - DOE STD 1098-99

Who's Responsible?

	NRC		DOE	
	Site	Processor	Site	Processor
Accredited dosimetry	X		X	
Documentation		X	X	X
Review of results		X	X	X
Anomalies		X	X	X
Corrective actions		X	X	X
Appropriateness	?		X	

Recommendations

- Know the dosimetry you are using
- Communicate facility requirements to processor
  - Use site-specific factors when appropriate
- Review dose results and QA/QC
  - Investigate anomalous results
  - Document dose revisions

Recommendations (cont.)

- Audit the processing operation
- Submit *true* blind spikes every issue period
- **Communicate** any concerns to the processor
- Expect the same quality as if the processing was in-house