

# Experiences with TCS calibration and corrections with GammaVision at IFE

Trygve Bjerk and Elisabeth Strålberg

Institute for Energy Technology

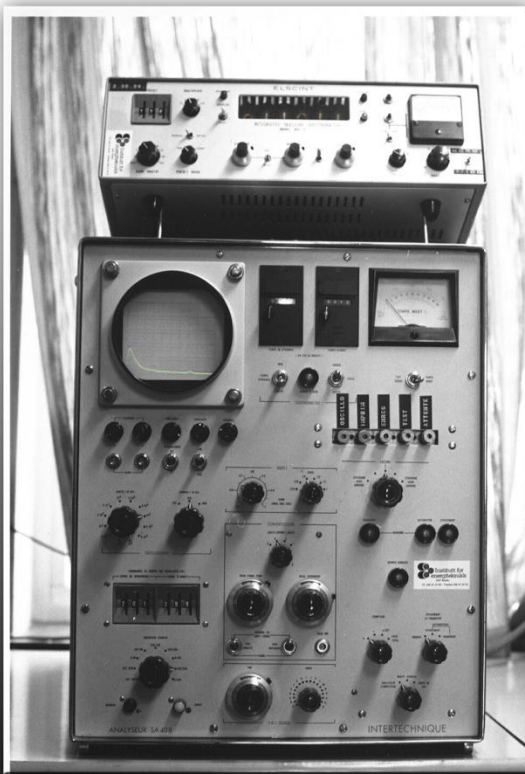
# Once upon a time...



# I ♥ 80's

- IFE has been using Ortec's software for gamma spectrometry since 1987
  - 1<sup>st</sup> edition of Geligam released 5 January 1987
- Since then we have used all updates of Geligam, via Omnigam to today's GammaVision 6.09

# 1980s



# Today

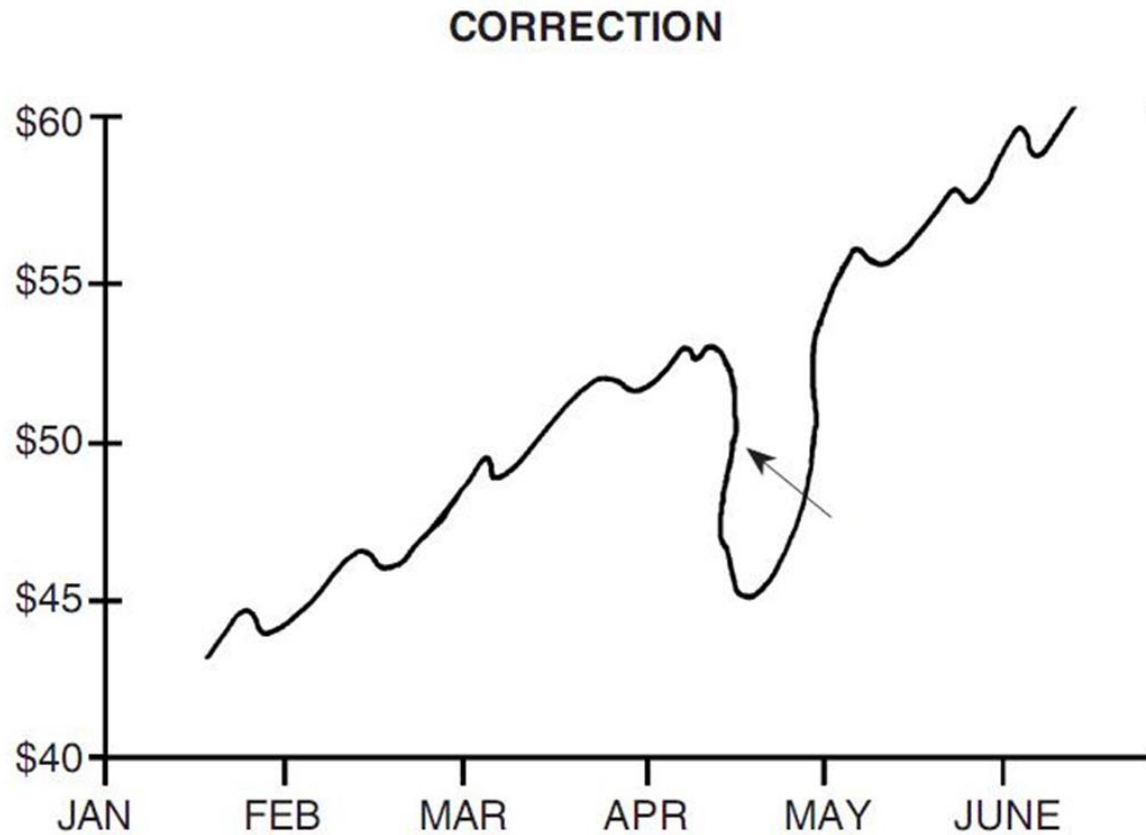


# Working with Geligam

- Using the master.lib included in the software (not large) and most powerful PC available at that time
  - Started the process for nuclide identification and quantification at Monday, early morning
  - Friday at 6 pm, the computer was still working with the same spectrum



# Different corrections in gamma spec

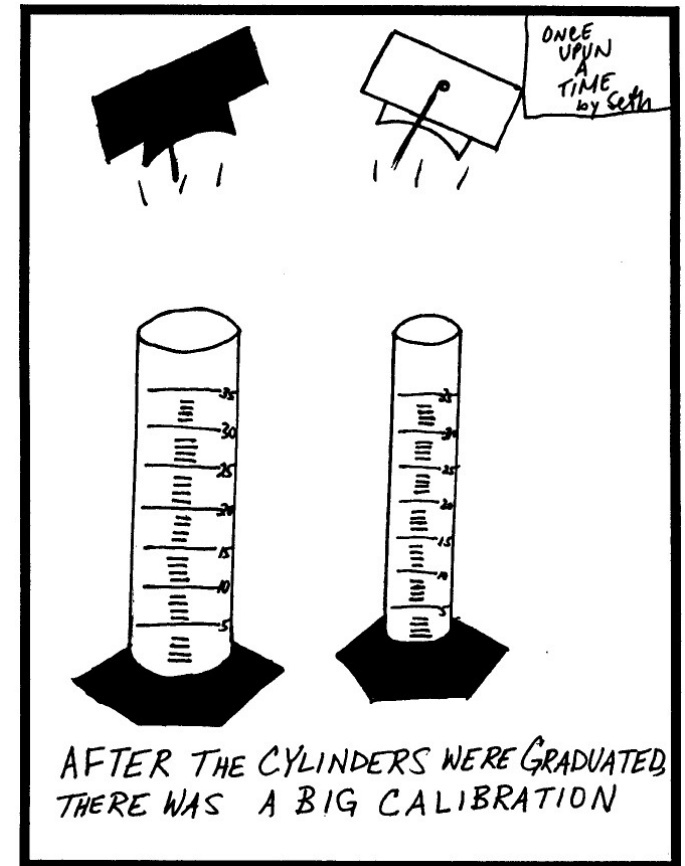


# Different corrections in gamma spec

- Peak background:
  - Implemented in GammaVision v.2 (1997)
- Absorption:
  - Implemented in late 90s
  - Done individually on each sample according to method by Cutshall (external source)
- True coincidence summations:
  - No corrections made until 2012
  - Implemented as a direct result of participating in GammaSem 2009, 2010 and GammaWorkshops 2011

# True coincidence summation - calibration

- Recommended to use a specially designed multi-nuclide solution
  - Both TCS and non-TCS radionuclides
  - Only one tick-box in GammaVision for TCS calibration
  - Problem: US date format
  - No control of the quality of the calibration
- Example ...



# True coincidence summation - correction

- Very easy once a correct efficiency calibration curve has been obtained
  - Only one tick-box to be marked
  - No information about correction factors
  - Only information that a correction has been made
- Example ...

