



Moving a cyclotron control room from old to new location with no lost time



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Applied Technology Group

- Introduction – who we are, what we do?
- Why do we needed a new control room?
- Cyclotron control room move preparation
- Cyclotron control room move
- Verification, validation
- Conclusion



Introduction



Applied Technology Group

- ATG is a TRIUMF's group operating three cyclotrons
- ATG provides irradiation services for commercial company NORDION
- Beam is used for production of the several isotopes for medical application



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We operate three cyclotrons:

-CP42, 42 MeV up to 200 μ Amp – 1981

-TR30-1, 30 MeV up to 1 mAmp – 1991

-TR30-2, 30 MeV up to 1 mAmp – 2003

Small group – 30 people, we operate, maintain/repair all our system as well as we design and build equipment



Three distinctive stages:

1980 – first cyclotron - CP42

1991 – second cyclotron – TR30-1

2003 – third cyclotron – TR30-2



Why do we needed a new control room?



The simple answer is:
the old one is too small



The old control room problems:

- Too small
- Hallway
- Located in the evacuation zone



Old control room

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Cyclotron control room move preparation



There was only one requirement:

Move it fast



Preparation:

- Inventory of the modifications
- Planning the modifications
 - using the cyclotrons maintenance days
- Identifying needed equipment
- Implementing the modifications
- Regulatory requirements



Grey Hill PLC



Iconic Genesis for Windows HMI

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Regulatory requirements:

- Human Factors Engineering Report
- Verification and validation



Human Factors Engineering Report

Human Machine Interface Systems

Job Design

Operating Experience Review

Physical Working Environment

Human Reliability

Shift Work Systems and Staffing

Validation

Verification



Move into new control room

-Fast

-Painless



The new cyclotron control room

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Verification, Validation



Operators feedback was used to
verify and validate that we met all
the requirements



-Some small issues identified and corrected

- Alarm panel size identified as a problem



New alarm panel

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Move went well, but after ten years
in the new (now old)control we
discover (surprise) that is small again



Conclusion

Think big



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Thank you!