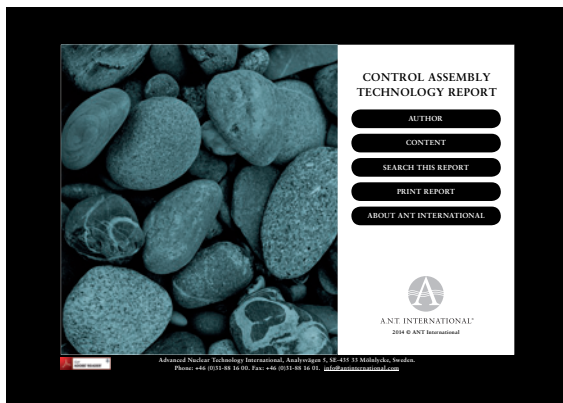




HANDBOOKS & REPORTS

# Control Assembly Technology Report



*Deliverables:  
Handmade, hardcover report printed  
in four-colour, searchable CD rom with  
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## Objective

ANT International, is publishing a Report on Control Assembly Technology becoming available during the first part of 2014. This constitutes Volume III of the series of Fuel Material Technology Reports (FMTRs). The author is Mr. Alfred Strasser. The Report on Control Assembly Technology describes the designs, manufacturing, performance and issues related to BWR/PWR/VVER/CANDU Control Assemblies with Ag-In-Cd (AIC), B<sub>4</sub>C, Hf absorber materials and stainless steel structural materials.

# Contents

The Report covers the following topics

1. Introduction
2. Control assembly designs
  - Designs for PWRs, VVERs, BWRs and CANDUs
  - Design Criteria
3. Ag-In-Cd (AIC) absorbers for PWRs
  - Designs
  - Properties
  - Transmutations, Swelling, Creep
  - Absorber-Clad Interactions
  - Performance, Swelling, Wear
  - Design Changes
4. Boron Carbide ( $B_4C$ )
  - Designs, BWR, PWR
  - Properties
  - Vipac, pellets
  - Transmutations, Swelling
  - Absorber-Clad Interactions
  - Performance, BWR, PWR
  - Design Changes
5. Hafnium (Hf)
  - Designs, BWR, PWR
  - Properties
  - Transmutations
  - Performance, BWR, PWR.
6. Stainless Steels
  - Alloy Composition and Structure
  - Stresses and Their Sources
  - Water Chemistry Environment
7. References

## Author



*Mr. Alfred Strasser*, a material scientist, has more than 50 years of experience in core technology, in the design, fabrication and irradiation of nuclear fuels for LWRS, FBRs and test reactors, for 18 years at NDA and United Nuclear, for 22 years at S.M. Stoller and currently as President of Aquarius Services Corp.

His activities since 1954 have included for clients worldwide:

- Design and design reviews of nuclear fuels and control assemblies
- Fabrication and audits of fabrication of UO<sub>2</sub> and MOX fuels
- Irradiation testing of advanced fuels and control assemblies
- Failure analyses of fuels and other core and plant components
- Materials technology evaluations
- Effects of water chemistry on fuel and core component performance
- Management of R&D programs
- Specifications and evaluation of commercial bids for fuel , control assemblies and other core components

## Deliverables

- Handmade, hardcover report printed in four-colour
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- Optional one-day seminar on site

## Contact

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