

# Radiological Equipment

More knowledge – better informed decisions

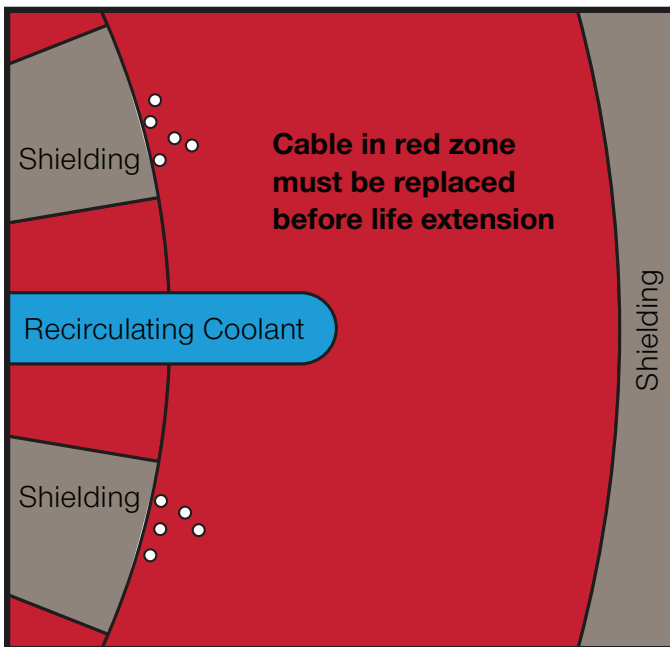
## Equipment Qualification (EQ)

### BWR Drywell Example

As plants look to extend their plant licenses beyond 60 years, the equipment and cabling must be analyzed to determine if it will exceed its EQ radiation margin. Using high-resolution computer modeling, AREVA can recover much of this margin, allowing the plant to reduce the amount of equipment and cabling that will need to be replaced.

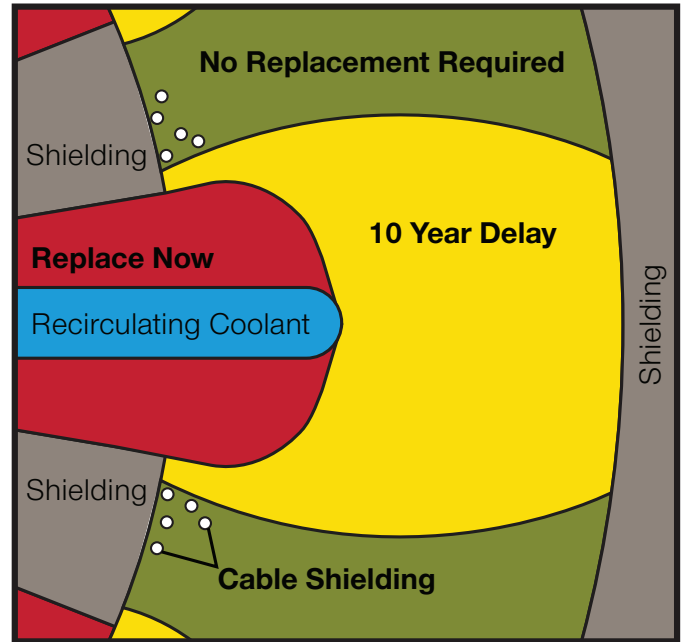
#### Pre-1980 Analysis Max Dose Applied Everywhere

As an example, for a pre-1980 analysis, the results show the areas (red) that must be replaced for a BWR drywell. All of the cables in this area needed replacing after 60 years.



## Result

- All cables to be replaced for life extension
- No credit for:
  - Shielding details
  - Modern radiation methods
  - Validation by measurement



A typical result for today's high-resolution computer models shows areas (green) where the cable will have sufficient radiation margin at 60 years, areas (yellow) where the cables will need to be replaced in 10 years and a much smaller area (red) where the cables will need to be replaced immediately.

As an example, for one plant's 60 year life extension, the client saved \$1.5 million by avoiding cable replacement.

## Typical Result

- Fewer red areas
- Most cable good for 60 years
- Shows where small shielding additions might save more cable

## Benefits

- Can be used for BWRs and PWRs
- Can determine what cables will not need replacing
- Can allow for a more systematic replacement schedule for the cables that do need replacing
- Can give guidance to actions now (i.e. shielding placement) that could avoid cable replacement in the future

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