



**RIC 2010**  
**Practical Aspects of**  
**Decommissioning Funding**  
**Assurance**

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**Office of Nuclear Reactor Regulation**  
**March 9, 2010**



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**March 9, 2010**



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**Thomas L. Fredrichs**  
**Division of Policy and Rulemaking**  
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## Fund Status Report Information

- Minimum under § 50.75 (b) and (c)
  - BLS data in NUREG-1307 is only an example
  - Use December data of reporting year
  - If using a site-specific estimate, then report it as well



## Fund Status Report Information (continued)

- Amount accumulated
  - Market value of securities, not basis
  - Full amount, even if it exceeds the minimum requirement
  - Do not include funds held in accounts not listed in NRC regulations – “refundable escrows”
  - Do not include spent fuel or non-radiological funds



## **Fund Status Report Information (continued)**

- Schedule of annual amounts remaining to be collected
  - Authorized for collection in rates or non-bypassable charges
  - Required to be deposited in external sinking fund under contractual obligation
  - Identify source of collections



## **Fund Status Report Information (Continued)**

- Rates of cost escalation, earnings, other factors used in funding projections
  - Identify “other factors” if used
- Contracts under 50.75(e)(i)(v)
  - Must be identified
  - Report amounts to be collected



## **Fund Status Report Information (Continued)**

- **Modification to method**
  - Adding or eliminating funding methods
  - Changing existing methods (examples)
    - Adding refundable escrow
    - Changing terms of contractual obligations
- **Material change to trust agreement**
  - Includes trustee name change





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**Michael A. Dusaniwskyj**  
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# **Practical Aspects of Decommissioning Funding Assurance**

**-Calculations-  
&  
-Analysis-**



# Regulations

10 CFR 50.75

10 CFR 50.82

10 CFR Part 30, App. A

10 CFR 50.2



## **Guidance**

NUREG 1307, Rev 14 (TBD)

Reg Guide 1.159, Rev 2 (TBD)

## **Additional Reference**

Department of Labor Statistics

<http://data.bls.gov/cgi-bin/srgate>



## **Other Definitions**

Electric Utility Licensee

Non-Electric Utility Licensee

NRC Decontamination

Spent Fuel

SAFSTOR

DECON



# **Biennial Decommissioning Funding Reports**

1. Minimum Decommissioning Fund  
Required (Target)
2. Amount \$ Accumulated (Actual)
3. Schedule of Future Annuities



## **Biennial Decommissioning Funding Reports (Continued)**

4. Estimated Escalation & Earning Rate
5. Contractual Obligations
6. Modification of Method
7. Changes to Trust Agreements



# 1. Minimum Decommissioning Funding Formula, “Target”

10 CFR 50.75(c)(1)(i) & (ii) = “1986\$”

Must Update to Current Year “\$”

10 CFR 50.75(c)(2)

- NUREG – 1307, Rev. XX
- Department of Labor Statistics





## 2. “Actual” Balance as of Dec. 31<sup>st</sup>, 2010

Cumulative Total

Market Value

After Pending Tax

Dedicated to NRC Requirements only

-Volunteer Other Fund Balances-

- Subject to “Spot Checks”



### **3. Scheduled Annuities**

Total per Year

For each Year Anticipated

Dedicated to NRC Requirements only



## **4. Escalation & Earnings Rate:**

THESE ARE FOR FORECASTING

Escalation (inflation)

Average per Year for Duration of License

Earnings (Interest)

Average per Year for Duration of License



## **4a. 2.00% Real Rate of Return**

Standard Forecasting Assumption

Nominal Interest Rate

*(minus)* Taxes

*(minus)* Inflation

*(minus)* Management Fees

**THIS IS FOR FORECASTING**



## 5. Contractual Obligations

10 CFR 50.75(e)(2)(c)(v)

Estimate the yearly value

Reflects dedicated dollars to NRC requirements

**THIS IS FOR FORECASTING**



## **6. Any Modifications to the Method**

Include change in the chosen method as indicated from previous Biennial Decommissioning Funding Report



## **7. Any Modifications to the Trust Agreement**

Include any change\* in the Trust Agreement since the previous Biennial Decommissioning Report

\* Including Name Changes



## **What does the NRC staff do with this information?**

The Analysis is to find for Decommissioning Funding Assurance

LIC 205, Rev. 3 (TBD)





## NRC Staff Analysis

1. If “Actual \$”  $\geq$  “Target \$,” **STOP**
2. If “Actual \$” [F/P(i,n)]  $\geq$  “Target \$,” **STOP**
3. If “Actual \$” [F/P(i,n)] + “Annuity \$” [F/A(i,n)]  $\geq$  “Target \$,” **STOP**
4. If {“Actual \$” [F/P(i,n)] + “Annuity \$” [F/A(i,n)]} + { $\frac{1}{2}$  \$\$ [F/P(2%,7) – 1]}  $\geq$  “Target \$,” **STOP**
5. Plus Any Additional Credits Available...



## Minimum Decommissioning Funding Formula “Target”

Aleutian 1 is a PWR rated at  
3,700 MWt

\$105 Million [.065L+.13E+.22B]

[.65(2.23)+.13(2.746)+.22(5.153)]

[1.450+.357+1.134]

\$105 Million x 2.941 = \$308.8 Million

**In 2008\$ @ 0.0% = 2025\$**



## “Actual” Balance As of December 31, 2008

- Aleutian 1 states Actual Balance  
=\$137.3 Million
- $n = 17$  years left on License
- $i = 2.00\%$  Real Rate of Return
- \$137.3 Million [F/P( $i, n$ )]
- \$137.3 Million [1.400241]
- **\$192.3 Million in 2025\$**



## Scheduled Annuities

- Aleutian 1 states Annuity of \$6 Million
- $n = 17$  years left on License
- $i = 2.00\%$  Real Rate of Return
- \$6.0 Million [ $F/A(i,n)$ ]
- \$6.0 Million [20.012071]
- **\$120.1 Million in 2025\$**



## Decommissioning Funding Assurance

- **F/P = \$192.3 Million in 2025\$**
  - **+ F/A = \$120.1 Million in 2025\$**
  - **= \$312.4 Million**
  - **“Target” \$308.7 Million**
- Positive Difference of \$3.7 Million**

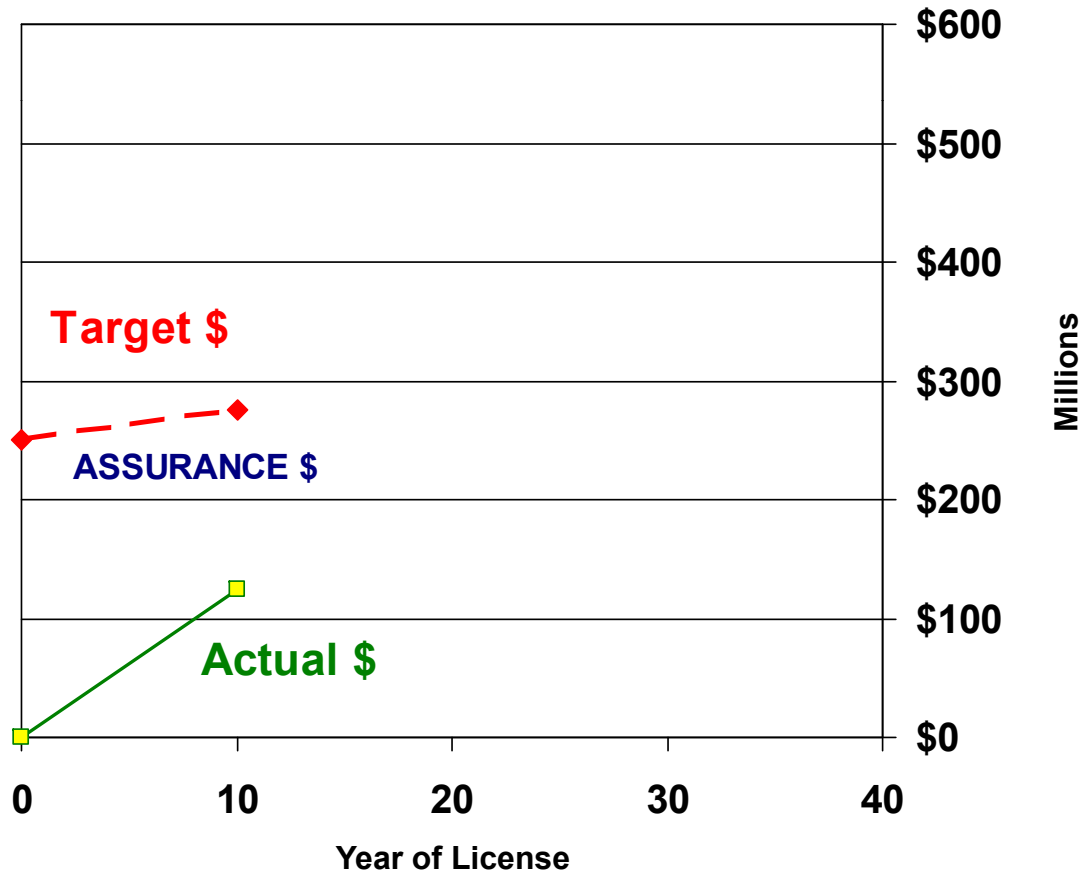


**Of further note...**

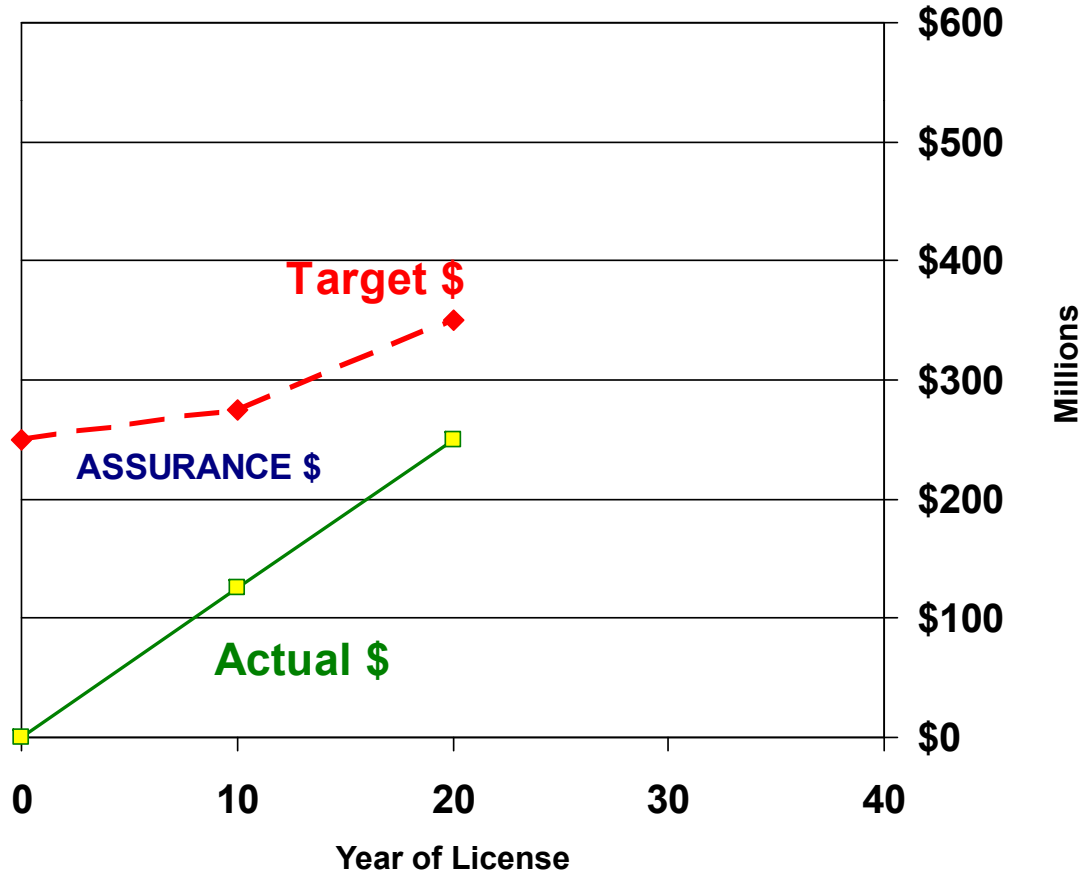
The difference between  
“Minimum Decommissioning Funding  
Formula”  
And  
“Site Specific Study”



# Decommissioning Funding Assurance Over Time

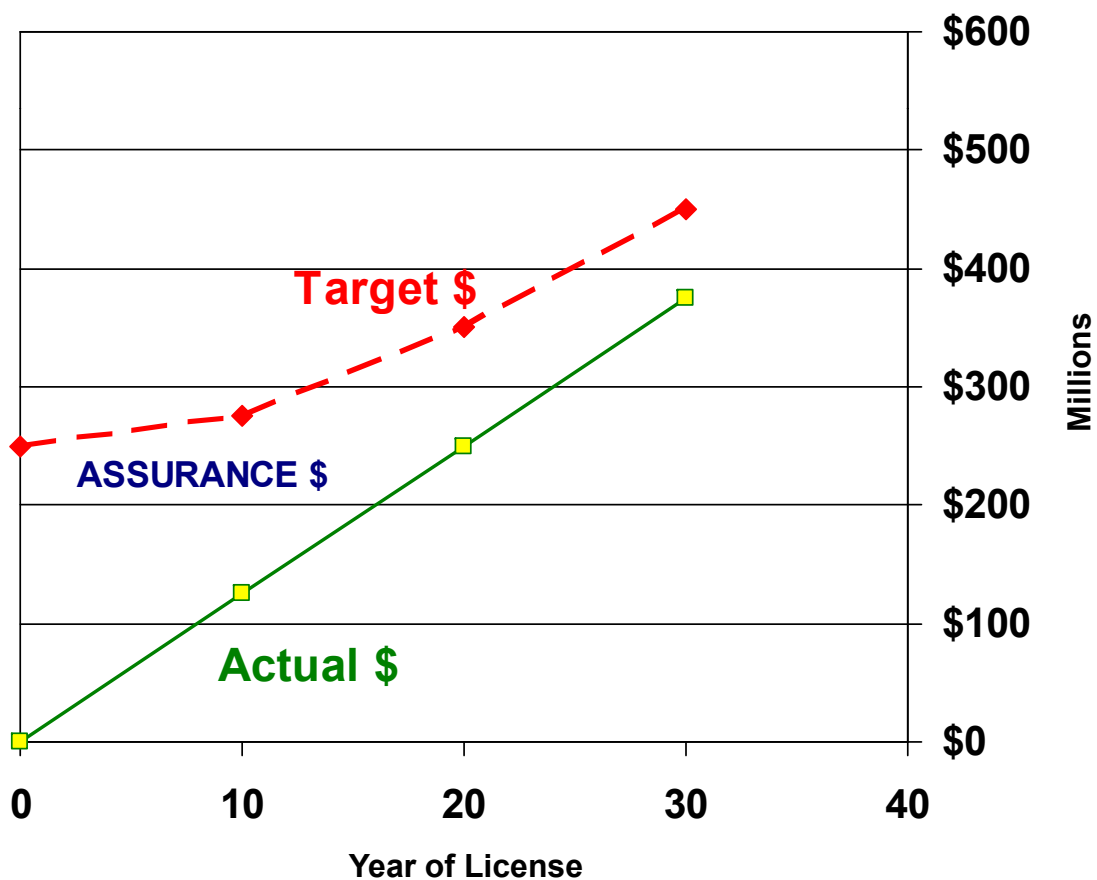


# Decommissioning Funding Assurance Over Time





# Decommissioning Funding Assurance Over Time



# Decommissioning Funding Assurance Over Time

