STP Nuclear Operating Company




Life Beyond 60






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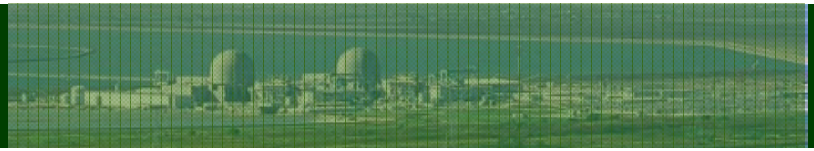
President & CEO

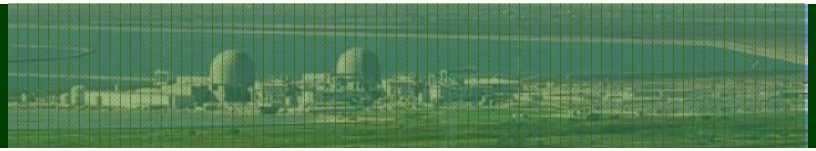
Introduction

- Appreciate this opportunity
- Subject of this Conference, **<u>"Life Beyond 60"</u>**
  - I am approaching 60
  - Don't think I am ready to be decommissioned
  - In most cases, probably shouldn't be decommissioning nuclear power plants either



Exciting Times In Nuclear

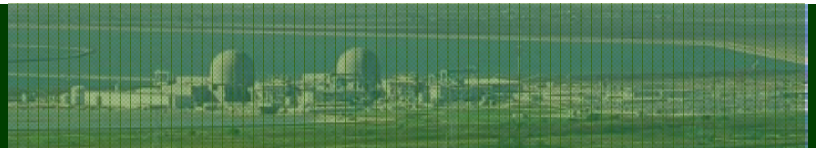
- Everybody is talking about new plants
  - 30+ announcements
  - Handful of applications already submitted
  - STP among that first wave
    - COLA – September, 2007
    - Two ABWRs



Exciting Times In Nuclear (Cont'd)

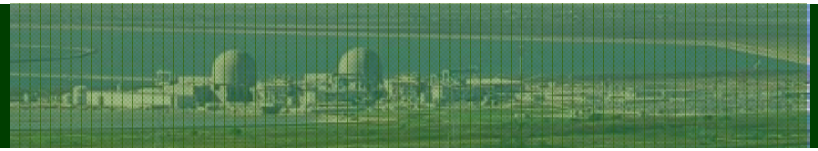
Need to take care of the 104 plants we already have

- Can't build new ones fast enough
- Need current plants to make any meaningful impact on Carbon Emissions



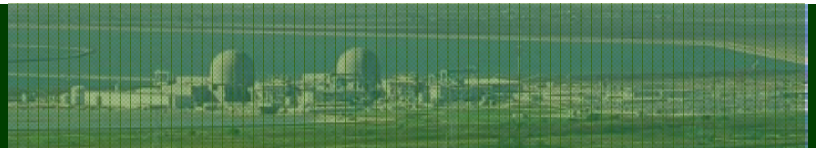
Exciting Times In Nuclear (Cont'd)

- Existing plants are a critical prerequisite for new plants:
  - Their performance builds confidence in the technology and our ability to safely operate the technology
  - Source of operating experience and operating resources
  - Provide valuable lessons on life cycle management



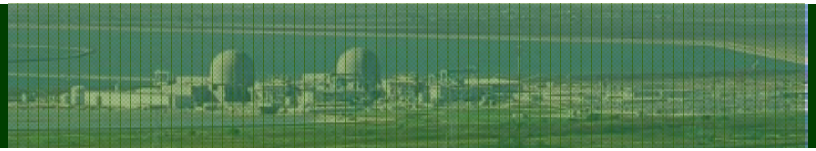
So Why Can't We Operate Beyond 60 Years?

- No reason why not
- Plenty of examples of complex machines having very long lifetimes
  - Hydro electric plants
    - 75-100 years
  - Capital ships
    - Battleships – USS Missouri – 6 different decades
    - Frigates – USS Constitution in commission since 1797
  - Aircraft – B-52-being flown by grandsons of original pilots
  - Certainly have structures that have lasted centuries and millennium



So Why Can't We Operate Beyond 60 Years?
(Cont'd)

- Current experience provides confidence in extending life
  - "6 Million Dollar Man" - we can rebuild him, make him better than ever
  - Learned how to replace nearly every major component in the reactor plant
  - Only one not currently done - the Reactor Vessel
  - Personally participated in replacement of:
    - Eleven Steam Generators
    - Eight LP Turbines
    - Soon – two Reactor Vessel Heads
- Can be done

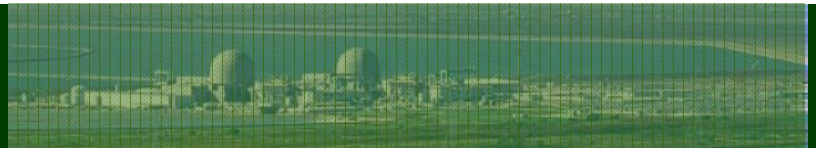


Does Operation Beyond 60 Years Make Business Sense

Old model – 40 year fixed life, depreciated to meet rigid regulatory models

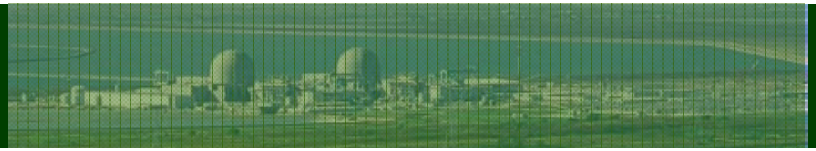
Assumed 40 year components with the only consumable being fuel

Doesn't fit today – new paradigm



Does Operation Beyond 60 Years Make Business Sense (Cont'd)

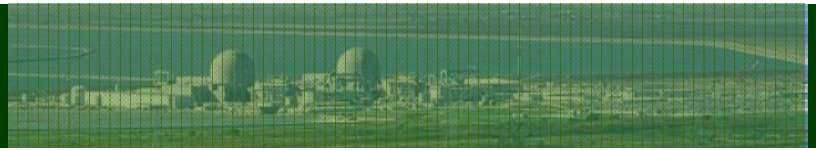
- Current License Extension Program with the NRC has been a tremendous success
  - Predictable & Sustainable
  - Well managed by the NRC
  - Most importantly – Deals effectively with technical issues associated with Life Extension
  - Need to build on this model



Does Operation Beyond 60 Years Make Business Sense (Cont'd)

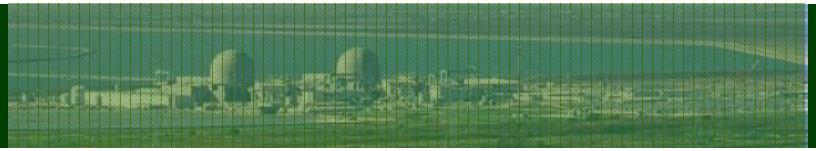
Environmental aspects are compelling

- Clean, safe, reliable power
- Significant contribution to restricting & controlling greenhouse gasses



Does Operation Beyond 60 Years Make Business Sense (Cont'd)

- Economics are excellent
  - Many of the plants are essentially paid for
  - Low cost option for generating electricity
  - Economics are very favorable in regulated and deregulated markets
  - Capital investments are modest compared to the payback

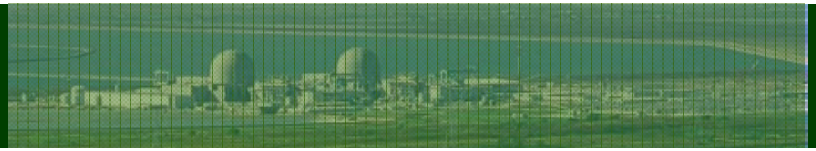


Does Operation Beyond 60 Years Make Business Sense (Cont'd)

Industry executives are very positive on life extension

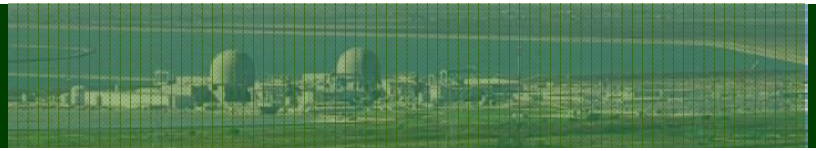
Vast majority – likely

More than half – very likely



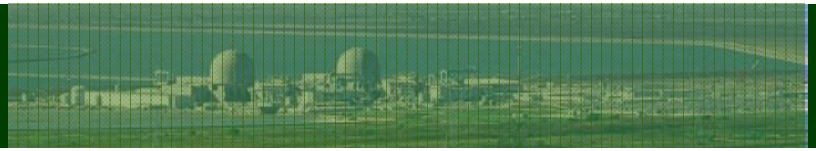
So, Do We Have All The Answers?

- No, but we are learning more each day
  - Growing confidence in ability to manage age degradation mechanisms
  - Programs like Material Reliability have produced great tools such as the Materials Degradation Matrix
  - Utilities are making significant investments to assure long life



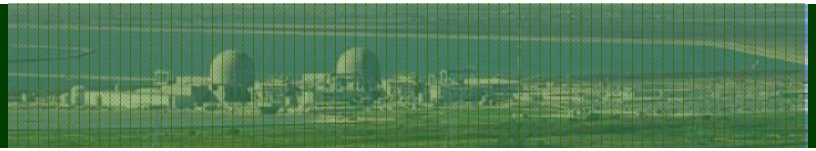
So, Do We Have All The Answers? (Cont'd)

- These efforts are not enough
  - Need significantly more R&D (Research & Development) to identify methods to upgrade our Life Cycle Management techniques – Significant Public / Private Partnership
  - "Strategic Plan for Light Water Reactor R&D" developed by industry & Idaho National Laboratory in late 2007 – will be discussed more later today



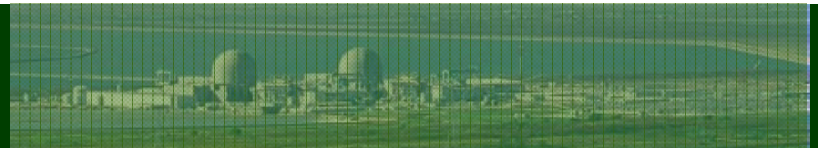
So, Do We Have All The Answers? (Cont'd)

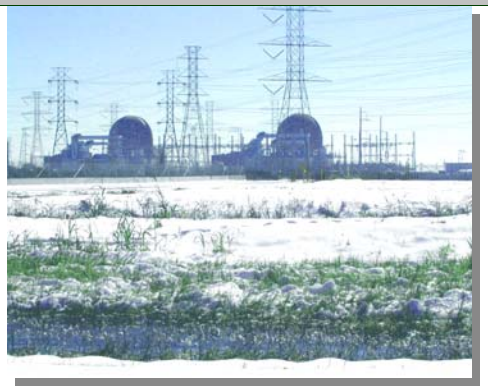
- Need to do the R&D to assure the life extension of the current fleet and the new ALWRs that are coming
  - Build the technical case for "Life Beyond 60"
  - Identify the knowledge gaps
  - Develop the Plans of Action to close these gaps
- Hopefully, this workshop will start the dialog to build those plans



Summary

- "If I had known I was going to live this long, I would have taken better care of myself"
- Need to assume we are going to live that long
- Start building the plans to make it a reality
- At STP, our Vision is "to improve lives"
  - Nuclear Power does improve lives
    - No CO_2 emissions
    - Safe & reliable
    - Efficient
  - National, state and local economics depend on electricity – brings significant benefits
- Our duty to assure these benefits continue to be available and are not curtailed by an artificial mandated lifetime for our power plants





Thank you for your time!