



Strategies for Managing Liquid Effluents

- Options, Actions, & Results -

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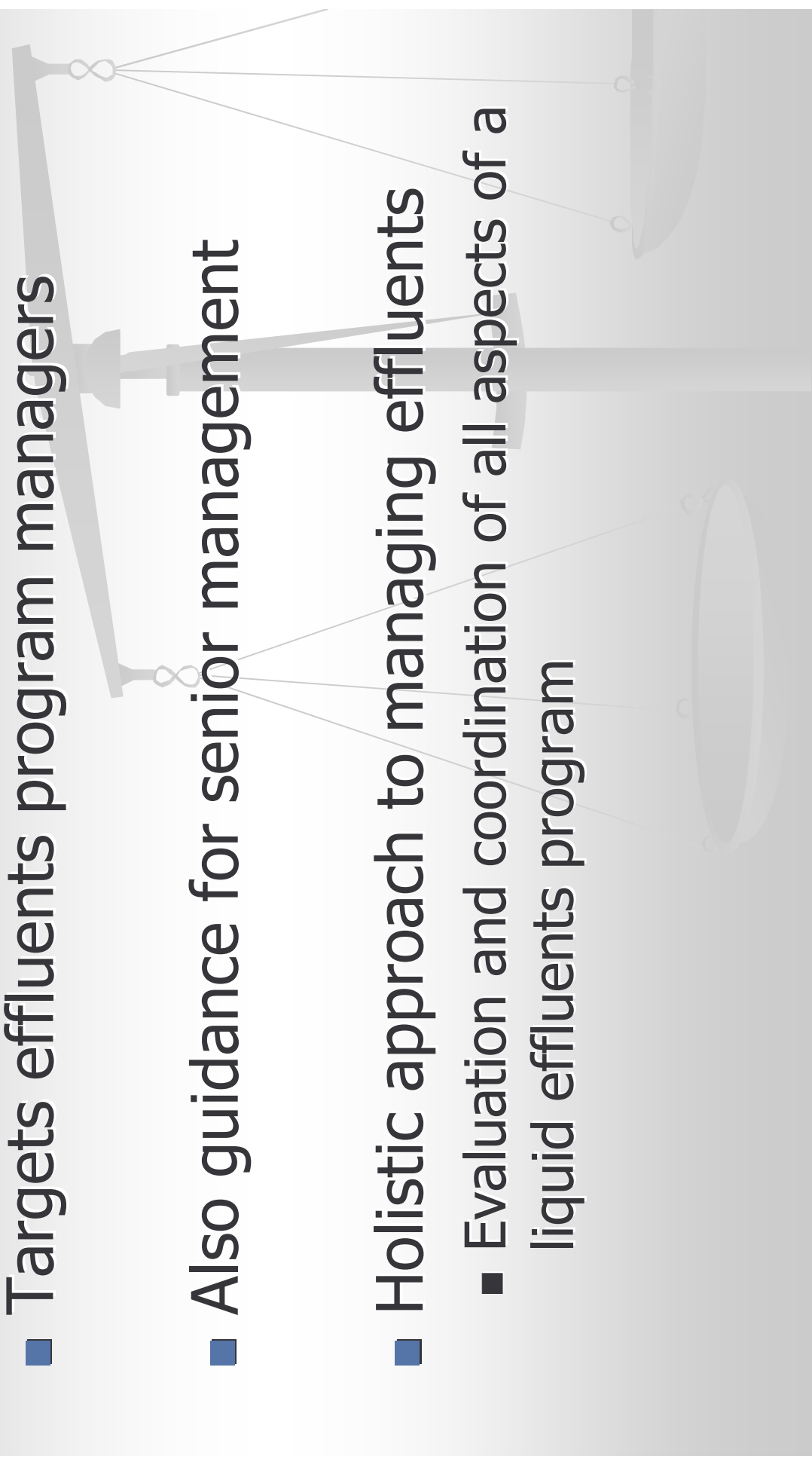
Project Overview

- Variety of factors that impact quality and effectiveness of effluent management programs
 - balance MFP, AP, H3, gas, on & off-site dose, liquid & solid waste volumes
- Industry goals - continue to be lowered
- Team of ~20 utility and other industry experts
 - liquid radioactive waste processing
 - liquid and solid effluents
 - chemistry disciplines
- Developing a liquid effluents strategy document

Objective

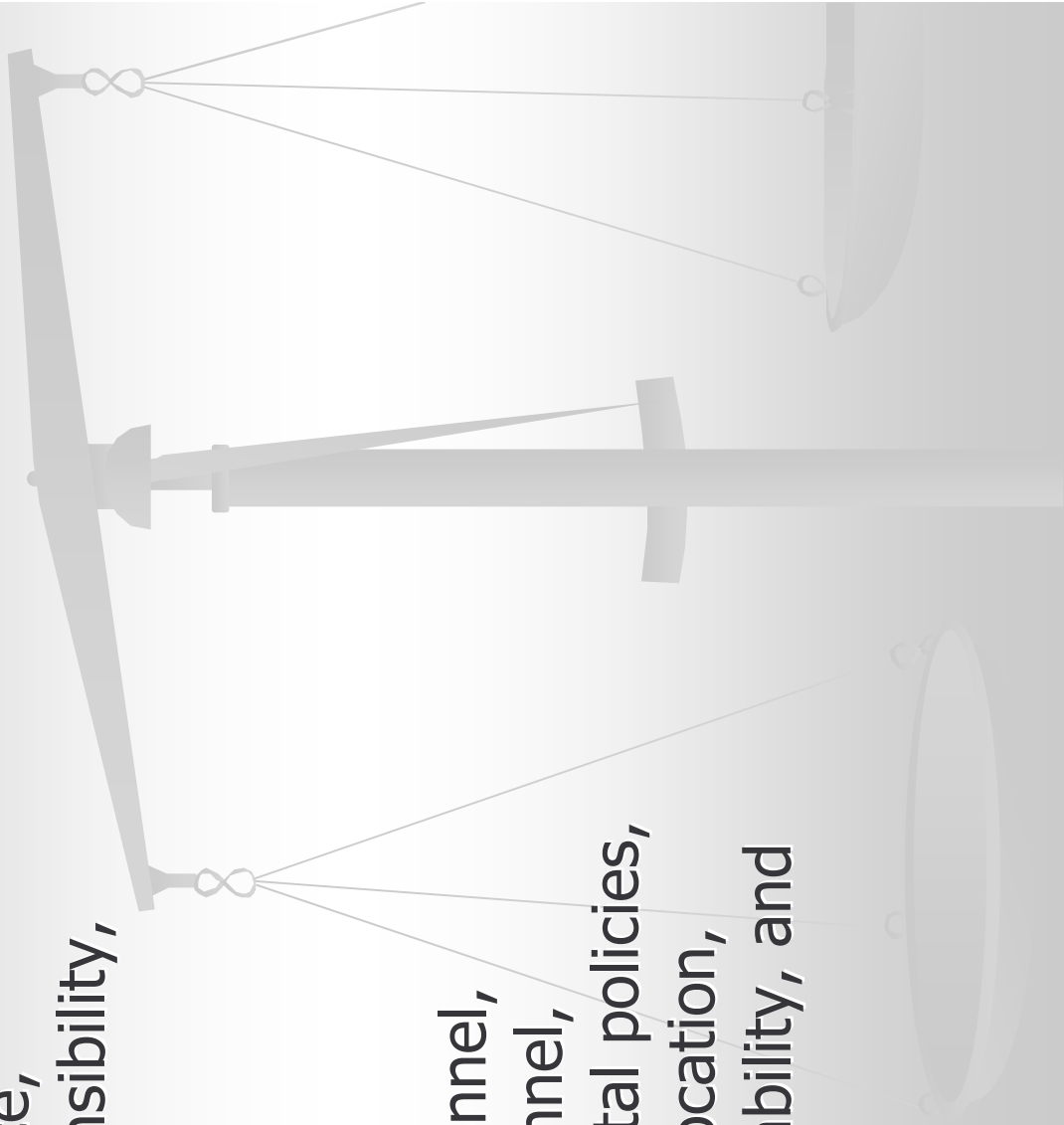
- Primary: develop a tool that can be used to review and analyze liquid effluents strategies
 - Also evaluates proposed program revisions
- Provide sensible guidance for long-term liquid effluents program success
 - without prescribing a single path to attaining that end
 - for domestic and international BWR & PWRs
- Presentation
 - project overview
 - methodology logic
 - current project status

Document Content

- Targets effluents program managers
 - Also guidance for senior management
 - Holistic approach to managing effluents
 - Evaluation and coordination of all aspects of a liquid effluents program
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Program Aspects

- Regulatory compliance,
- Environmental responsibility,
- Cost,
- Liquid effluents,
- Airborne effluents,
- Solid waste effluents,
- Dose to on-site personnel,
- Dose to offsite personnel,
- Regional environmental policies,
- Reactor design and location,
- Legal and financial liability, and
- Political liability.



Methodology



- Effluents program review process
 - 3 phases
 - 30 distinct steps
- Guides user through queries & relevant information
- Next slides contain primary steps
 - without details contained in the actual document

Phase I

- Current Performance Review -

- Draft a program review statement
 - why is this evaluation being performed?
- Assemble a multi-discipline site team.
- Assemble or locate the required documentation.
- Define current plant-specific processing/treatment practices and installed options.
- Define current effluent goals.
- Identify current & historical plant-specific performance values for effluents processing/treatment.
- Benchmark current industry effluents performance.
- Define plant-specific sources of batch processing liquid effluents.
- Define plant-specific sources of other release liquid effluents.
- Model liquid effluent environmental dispersion.

Review Process - Phase I

- Define plant system chemical applications (corrosion & pH control, etc.).
- Review pending changes to those applications.
- Identify pending changes to plant operating strategies
 - integrate their impact into the evaluation.
- Identify & review source-term reduction initiatives.
- Review the EPRI Radioactive Liquid Processing Guidelines and Radwaste Desk Reference documents
- Perform a baseline economic analysis.
- Define strategy review performance & cost goal(s).
- Review alternate or advanced processing options relative to goals and restrictions.

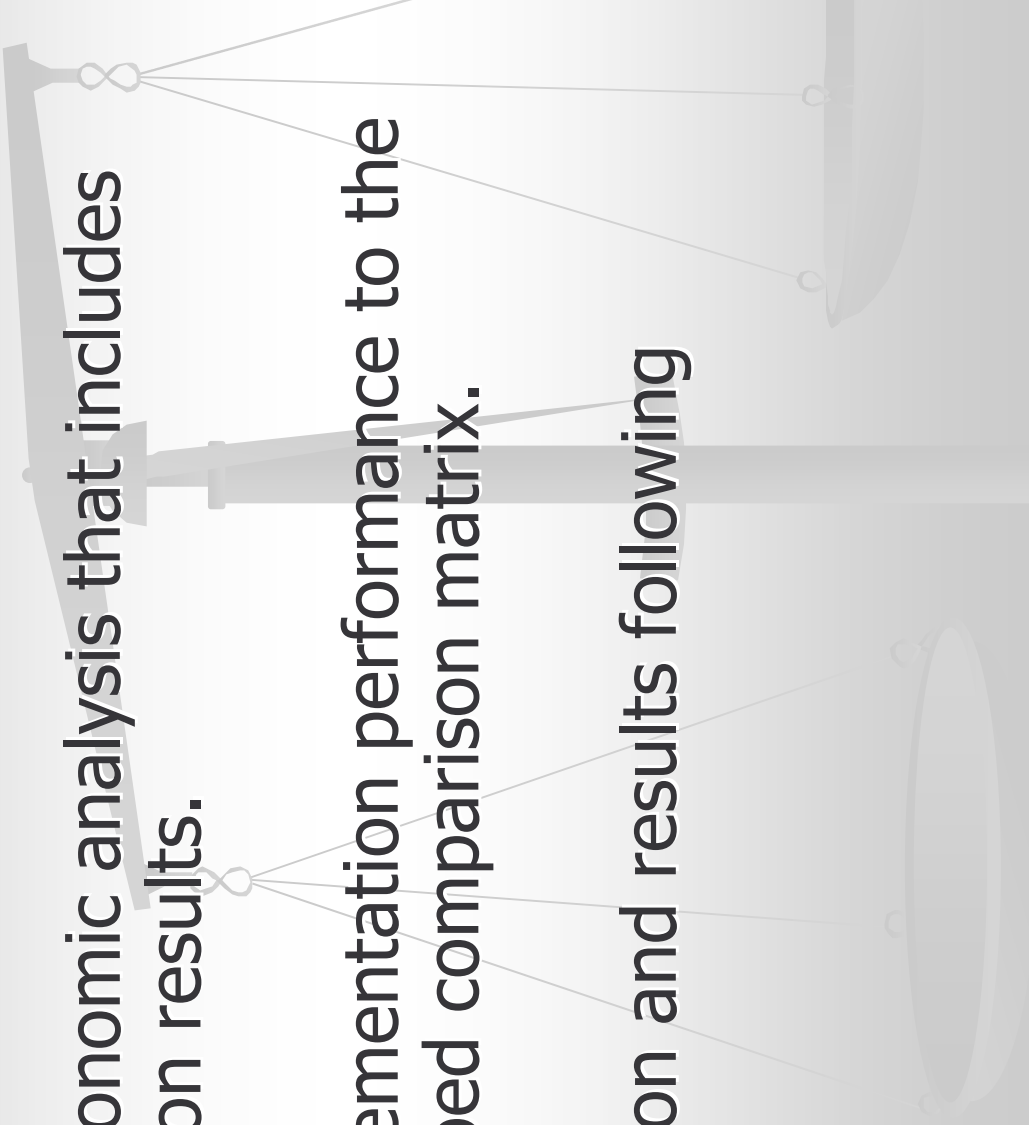
Phase II

- Strategy Definition & Evaluation -

- Validate existing, or define a proposed strategy
- Evaluate a proposed strategy's compatibility and its impact.
- Review that proposal's impact on insurance premium and liability.
- Review the potential impact on all reporting requirements.
- Perform a second, proposed strategy economic analysis.
- Develop a comparison matrix
 - current values versus projections for proposed strategy (goals).
- Review the initial program review statement relative to that comparison matrix
 - modify the statement, goals or strategy as necessary.
- Present proposed strategy to Senior management.
- Document and archive the final decision and its basis.

Phase III

- Post Implementation Validation -

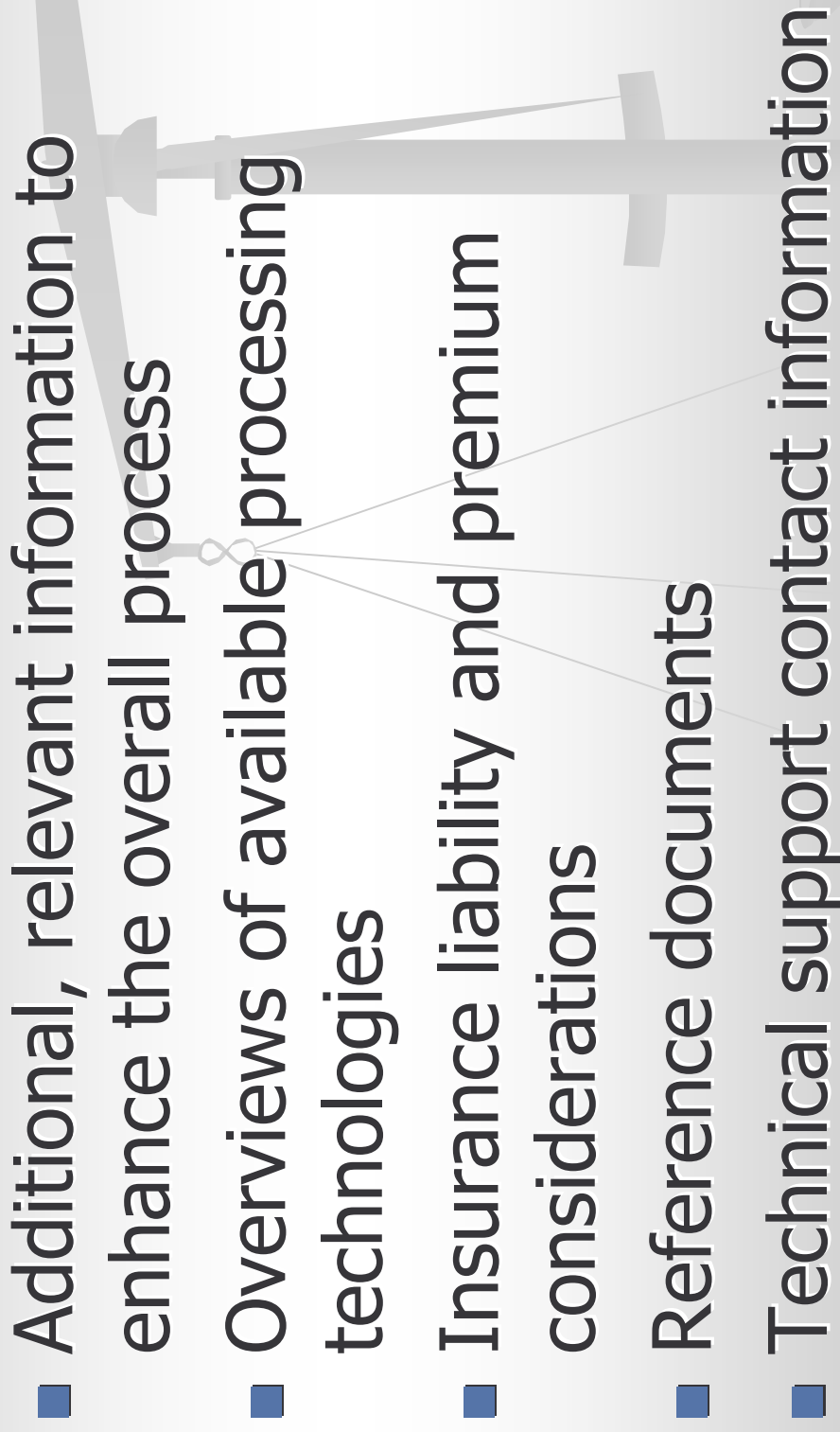
- Perform a third economic analysis that includes post implementation results.
 - Add the post implementation performance to the previously developed comparison matrix.
 - Validate the decision and results following implementation
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- A faint, light gray background graphic of a balance scale is visible. The scale is tilted, with the right pan being lower than the left pan. The central pillar and the horizontal beam are clearly defined. The pans are simple, shallow bowls. The overall image is semi-transparent, allowing the text to be read over it.

Additional Features



- Technology compatibility checklist
- Validation Table
 - validate analysis, decisions, and implementation results
 - input the program attributes for comparison
 - program element
 - current value or result
 - proposed strategy projected value
 - post implementation value
 - addresses program elements such as released activity, airborne activity, solid waste data, liability impact and others.

Additional Features

- Additional, relevant information to enhance the overall process
 - Overviews of available processing technologies
 - Insurance liability and premium considerations
 - Reference documents
 - Technical support contact information
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Benefits



- Establish a balanced effluents program.
 - carefully coordinated liquid strategies
 - airborne and solid effluents programs
- Clear indication the station is aggressively pursuing improvements to, or maintenance of long term:
 - environmental stewardship
 - regulatory compliance
 - cost efficiency
- Will serve to heighten the awareness of the plant staff
 - senior management roles and responsibilities
 - regarding their impact on the liquid effluents program

Status



- 2 of 3 planned meetings completed
- 3rd meeting will be conducted tomorrow
- Document continues to be reviewed and fine-tuned
- Slated for delivery to EPRI in the fall 2003
- Many of the attributes of the final product suited for conversion to a simple analysis program
 - checklists
 - tables
 - cost analysis
- Extent and usefulness continues to be evaluated
 - by the committee and EPRI