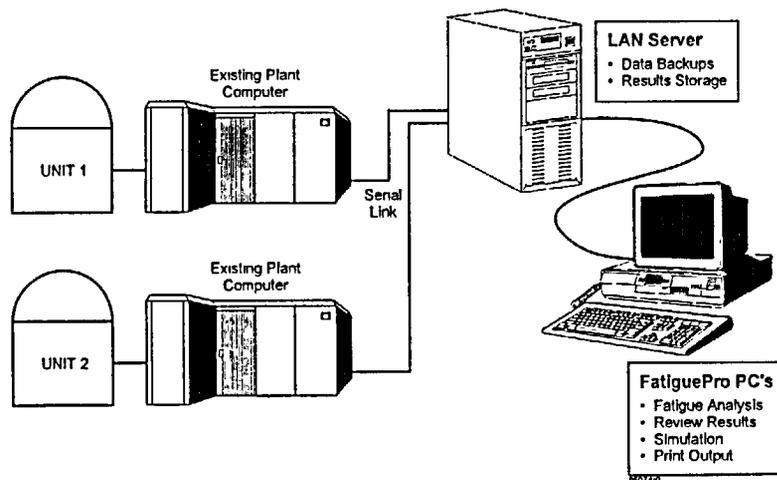


# *Fatigue Monitoring*



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# BACKGROUND

- **Fulfills Plant Technical Specification Transient Counting Requirements**
- **Best Approach for Addressing NRC Issues**
  - ◆ Bulletins 79-13, 88-08, 88-11
  - ◆ Pressurizer Surge Line Stratification and Pressurizer Insurge/Outsurge addressed using actual plant data
- **Reduced Fatigue Usage Compared to Design Projections**
- **Significantly More Knowledge of Plant Cycles**
  - ◆ Focused evaluation of critical areas
  - ◆ Ability to assess alternate operating approaches
  - ◆ Ability to rapidly evaluate plant transients
- **Plant Life Extension**
  - ◆ Projected fatigue usage and cycle counting estimates
  - ◆ Required to demonstrate fatigue is adequately managed
  - ◆ Environmental fatigue issues require more refined approach
  - ◆ Implementation now will require significantly less effort later
- **Simulation Capabilities to do “What-If” Studies**



# SUPPORT AREAS

- **Stress-Based Fatigue Monitoring**
  - Stress-based fatigue (on-line stress analysis) for critical components
  - Takes account of *actual* plant transient severity and number of occurrences
  - Powerful graphics review of all relevant plant parameters, resulting stress, and fatigue usage
- **Automated Cycle Counting and Cycle-Based Fatigue Monitoring**
  - “Smart logic” counts and categorizes plant transients
  - All events and important parameters saved by software
  - Fulfills plant Technical Specification cycle counting requirements
  - Powerful, graphics review of all events
  - Cycle-based fatigue, utilizing cycle counts, for less severe components
- **Fatigue Crack Growth Monitoring**
  - Performs fatigue crack growth flaw tolerance assessments (actual or postulated flaws)
  - Takes account of *actual* plant transient severity and number of occurrences
  - Can be used to justify continued operation or determine re-inspection interval

