

Nuclear Regulatory Commission-Situation Awareness, Workload, Teamwork (SAWLT)

A Tool for Nuclear Power Plant Regulators

The Nuclear Regulatory Commission (NRC) must continually evaluate opportunities for human error when new designs are introduced in Nuclear Power Plants (NPP). When new NPPs go through the licensing application process or legacy NPPs undergo an instrument and control update, reviewers must determine if operator situation awareness, workload, and teamwork (SAWLT) are suitably measured before determining if the facility meets minimal safety requirements. The present effort was aimed at providing guidelines and an informative tool to facilitate the NRC regulators evaluation of SAWLT measures.

The screenshot displays the 'Workload' section of the SAWLT tool. It features a table with four columns: Questions, Instructions, Selections, and Recommendations. The first row asks 'Is the metric proposed by the applicant a workload metric?' and provides instructions to select a metric from a dropdown menu (currently showing 'BAGAT'). The second row asks 'Is the applicant planning to use a sufficient sample size?' and instructs to select a sample size (currently showing '1'). The third row asks 'Is the applicant planning to implement the metric appropriately?' and instructs to select how the metric is planned to be used (currently showing 'post-task'). Below this is a 'NASA TX (HB)' table with columns for 'Metric Name', 'Metric Description', 'Metric Category', 'Metric Type', 'Metric Status', 'Metric Source', 'Metric Date', 'Metric Version', 'Metric Author', 'Metric Reviewer', 'Metric Approved', 'Metric Effective Date', and 'Metric Expiration Date'.

Tasks

In order to minimize human error and ensure safe operation, new NPP designs and NPP design modifications must meet extensive safety criteria. These criteria are described in the Human Factors Engineering (HFE) Review Model, defined in NUREG-0711, and identifies twelve factors or elements. The numerous SAWLT measures make it challenging to determine which ones are suited for NPP application. The Generic Metrics Catalog (GMC) organizes and synthesizes important information about each measure to assist regulators in understanding the measures available. The Decision Making Wizard (DMW) is a front end interface that enables regulators to enter details from applications and draws on the GMC to provide areas of concern for regulators consideration as feedback to applicants.

