

Digital Upgrade Strategic Planning Services for Nuclear Generation Stations

Altran Solutions offers a comprehensive program designed to assist nuclear power generation owner-operators with development of a living strategic plan for implementing upgrades to plant control systems. Whether one's interests are to capitalize on control system reliability and performance opportunities, or to avoid costs by deferring system upgrades, or both, Altran's program can bring value.

Altran's **Digital Upgrade Strategic Plan Development** program helps plant owners establish a rational, long-term (10-plus year) risks versus benefits vision of:

- which control systems should (or shouldn't) be upgraded,
- why specific control systems should (or shouldn't) be upgraded,
- the priority and sequence in which control systems should be upgraded, and
- what costs and benefits will be incurred and achieved.

Altran's program implements a systematic, documented, *living* digital upgrade risk/benefit assessment process that combines generic and plant-specific factors derived from *Standard Review Plan*, INPO AP-913, expert panel input and pilot implementation lessons at several plants. For each control system, Altran's assessment process facilitates development of upgrade prioritization ranking based upon:

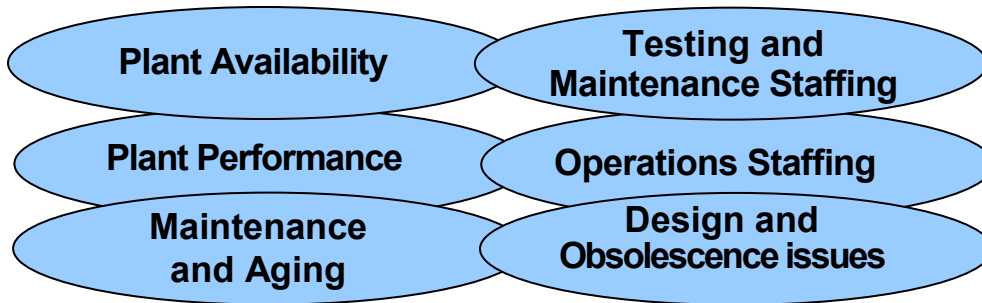
- direct and consequential impact on plant availability,
- direct and consequential impact on plant performance,
- maintenance and aging,
- testing and staff support burden,
- vendor support, and obsolescence issues
- potential for operational design improvement, and
- interaction with upgrade strategy for other control systems.

Altran's **Control Systems Upgrade Advisor (Advisor)** product is a customized set of software tools used to implement Altran's program. Presented in an easy-to-use questionnaire form, the self-documenting **Advisor** allows engineers to derive control systems upgrade prioritization by answering a series of simple questions. The **Advisor** includes scores and weighting factors that derive upgrade/risk priority rankings based on system characteristics. Pre-defined weighting factors can be used, or plant-specific weights can be applied to identify and prioritize the need for system upgrade. Numerical prioritization rating results can be used *as-is*, or can be subjected to further plant-specific analysis to refine the relative upgrade need, or risk of not upgrading, and the priority status of each system. The resulting long-term strategy can be illustrated in scheduling systems such as MS-Project, with plant-specific prerequisites and constraints.

Altran's program, as implemented in the **Advisor** tool set, provides owners with a simple, intuitive, logical, documented, living environment for development and maintenance of the long-term view of a plant's control systems migration path.

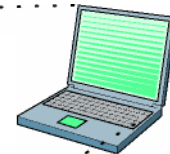
Altran offers digital upgrade strategic plan development services that include training, system characterization, going-forward Digital Control System platform specifications, design change package engineering and system integration support by personnel with extensive experience in nuclear plant control systems engineering.

Altran's **Advisor**-based approach provides a refined and tested risk and benefits assessment process that expedites development of a long-term strategy for dealing with the key issues that affect control systems.

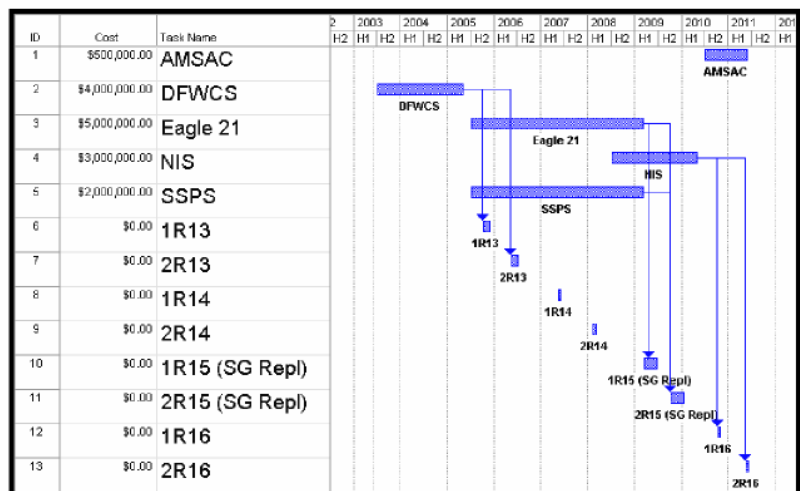
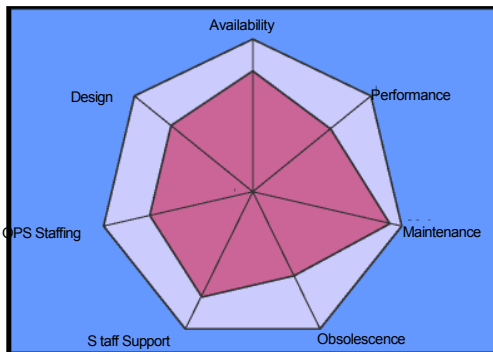


1. Compile critical characteristics in the Altran Advisor workstation

Plant Availability			
What is the INPO AP-913 category for this system?	RTF	Non-Critical	Critical
Does the system have a nuclear safety-related function?	No	Yes	
Has failure or malfunction of this system ever caused a plant trip, power curtailment, or other performance reduction or problems?	No	Near Miss	Yes
Are there any single failure exposures that could cause a plant trip, power curtailment or other performance reduction or problems?	No	Yes	
Is the system associated with the plant operating license?	No	Yes	



2. Assess individual systems; compare and prioritize



3. Visualize potential strategy

For more information on this capability,
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