

GENERAL PROBLEM STATEMENT

The focus on nuclear safety may be impacted when issues identified at one plant affect multiple plants, but are not addressed comprehensively with all pertinent inputs being considered, creating regulatory uncertainty for all stakeholders.

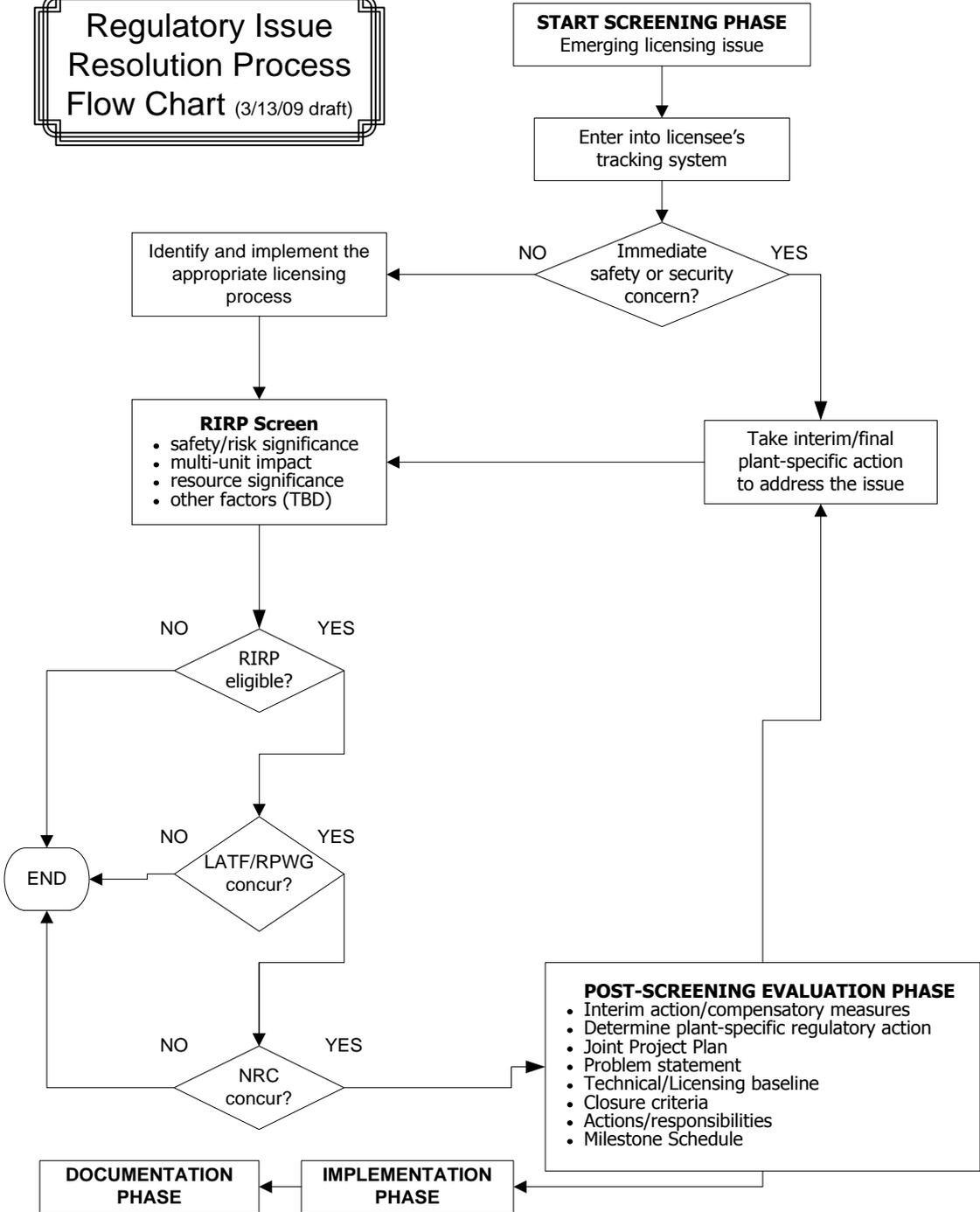
This reduces consistency with principles of good regulation — independence, openness, efficiency, clarity, and reliability.

NRC and Industry need a better-defined process for screening and resolving issues that derive from plant-specific licensing actions and inspections and have multi-unit applicability.

An NRC/Industry dialogue is needed to improve the following issue-resolution attributes:

- Efficiency
- Certainty
- Transparency
- Predictability
- Timeliness

Regulatory Issue Resolution Process Flow Chart (3/13/09 draft)



NEI PROPOSED PILOT
EMERGENCY DIESEL GENERATOR FREQUENCY & VOLTAGE

- *Problem Statement*

The Technical Specification Emergency Diesel Generator (EDG) Surveillance Requirement (SR) acceptance criteria for voltage and frequency are expressed as ranges that may exceed plant-specific input assumptions in licensing-basis accident analyses.

- *Multi-Unit Applicability*

The Improved Standard Technical Specifications (ISTS) specify acceptable ranges for steady state frequency and voltage. Seventy-six of 104 operating units have Technical Specifications consistent with the ISTS. The Technical Specifications for non-ISTS plants typically have SRs that are also consistent with the ISTS SRs.

CDBI Findings Pertaining to EDG Frequency/Voltage

Plant	Finding	Enforcement Basis	Extract from Inspection Report
A	Green NCV	Criterion XVI – Corrective Action	EDG capacity rating could have been exceeded if the EDG was allowed to run at the upper frequency band of 61.2 Hz as permitted by TS.
B	Green NCV	Criterion III – Design Control	Generator frequencies above the nominal frequency of 60 Hz can result in higher engine load than that experienced at the nominal generator frequency.
C	Green NCV	Criterion III – Design Control	The charging pump head curve performance test did not account for the EDG allowed under-frequency variation.
D	URI (closed)	N/A	When operated from the EDGs at the minimum TS allowed frequency, the pump [service water] developed head could be as much as 4% below that when powered from the grid at 60 Hz, as they are during surveillance tests.
E	Green NCV	Criterion III – Design Control	LOCA loading calculations did not account for the ± 2% variation allowed by TS 3.8.1.2.
F	Green NCV	Criterion III – Design Control	HPCS system calculation did not properly account for the Division III, diesel generator governor ±2% droop adjustment (frequency).
G	Green NCV	Criterion III – Design Control	Additional loads caused by the EDG operating at frequencies above 60 Hz were not considered in the loading calculations.
H(1)	Green NCV	Criterion V – Instructions, Procedures, and Drawings	An operability calculation [ICW intake temperature] did not include proper margin to account for instrument uncertainty or the potential impact on pump flows due to TS allowed under frequency tolerance of the EDG.
H(2)	Green NCV	Criterion III – Design Control	The engineering analysis of the results of the ICW pump performance tests did not consider the full extent of uncertainty associated with the test instrumentation or the impact of pump flow values of the most limiting frequency allowed for the EDGs.
I	URI	N/A	The design analysis assumed maximum supplied voltage variations based upon offsite power supplies which were analyzed to vary less than the technical specification allowed steady state variation for the standby diesel generators. Components throughout the plant would be adversely affected by either an undervoltage or overvoltage condition.
J	Green NCV	Criterion III – Design Control	The EDG LOCA loading calculation was based on nominal 60 Hz operation of pumps and fans, and did not account for the frequency variation allowed by operating procedures.
K(1)	Green NCV	Criterion III – Design Control	Accident analysis loading calculations did not account for the 2% variation allowed by TS 3.8.1.
K(2)	URI	N/A	The general plant-wide effect of the allowed EDG frequency variation (58.8 – 61.2 Hz) has not been completely addressed in the design calculations of the facility.