**DOCUMENTING THE REVIEW OF (U.S.N.R.C) VIRTUAL WORKSHOP ON REACTOR SITTING APPLICATION REVIEW**

It is vital to keep close track of your databases, strategies, and result counts, as these are essential element of your systematic review. This review, center on relevance of controlling the heat from Reactor core and the availability of AC power supply within the (USNRC) context and how it could be of benefit to other countries.

**Safety Significance on Availability of AC Power:** The power supply to AC should be constantly reliable at all time; safety power has a high tendency of safety. The Reactor core is known to be generating Heat, that is gradual decrease of store heat (decay heat) this process takes time even while its shutdown it still generate accumulated store heat. Provision for cooling down the heat or either way remover should be considered, provision of large pumps will be required for the cooling down of the reactor. Any failure of the pump could lead to overheating, and could lead to melting down of the reactor fuel due to overheat. This pumps also uses AC power, which could be generated either from offsite grid or onsite source.

**NRC Regulations and Guidance:** 10 CFR Part 50, Appendix A, General Design Criterion (GDC) 17 -Electric Power Systems.

* An offsite electric power system shall be provided to permit functioning of structures, systems, and components important to safety
* The offsite power shall provide sufficient capacity and capability to assure that the core is cooled and fuel is not damaged.

**Considerations for NPP Sitting:** Electric grid must provide reliable off-site power to nuclear power plants to minimize grid-related plant trips. Single nuclear power plant should provide no more than 10 to 15 percent of the load on the electric grid. Sufficient reserve generating capacity needed to ensure grid stability during plant shutdown

**Loss of Offsite Power (LOOP):** AC power interruptions or power outbreaks caused by external events such as: Transmission line faults, Weather: lightning, ice storms, tornadoes, hurricanes, etc. Plant will have no choose but to rely on emergency power supply (standby diesel generators and batteries) if offsite power is lost.

**Sitting Application:** (USNRC) does not appraise offsite power as part of their site recommendation review, this is assumed that the power grid all-overs the United States is stable and reliable. But embarking countries with power failure should consider the availability of reliable offsite power as part of the decision in principle to build a nuclear power plant and as a part of the site acceptability review.

**By: AdSTM,**

**NRC Office of International Programs**