ATTACHMENT C

PROPOSED TECHNICAL SPECIFICATION BASES

SAN ONOFRE UNIT 2

3/4.9.6 REFUELING MACHINE

The OPERABILITY requirements for the refueling machine ensure that: (1) the refueling machine will be used for movement of all fuel assemblies including those with a CEA inserted, (2) each machine has sufficient load capacity to lift a fuel assembly including those with a CEA, and (3) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

Five finger CEAs are removed from the reactor vessel either along with the associated fuel bundle utilizing the refueling machine or can be removed without the associated fuel bundle utilizing the refueling machine auxiliary hoist. The four finger CEAs are inserted through the upper guide structure with two fingers in each of the two adjacent fuel bundles in the periphery of the core. The four finger CEAs are either removed with the upper guide structure and lift rig or can be removed with separate tooling prior to upper guide structure removal utilizing the auxiliary hoist of the polar crane or the refueling machine auxiliary hoist.

Coupling and uncoupling of the CEAs and the CEDM drive shaft extensions is accomplished using one of the gripper operating tools. The coupling and uncoupling is verified by weighing the drive shaft extensions.

3/4.9.7 FUEL HANDLING MACHINE - SPENT FUEL STORAGE BUILDING

A. Refueling Operations

The restriction on movement of loads in excess of the nominal weight of a fuel assembly, CEA and associated handling tool over other fuel assemblies in the storage pool ensures that in the event this load is dropped (1) the activity release will be limited to that contained in six fuel assemblies, and (2) any possible distortion of fuel in the storage racks will not result in a critical array. This assumption is based on the calculated results which demonstrate that, with credit taken for the fuel handling building filters, the offsite doses would be well within (less than 25%) the 10 CFR 100 limits.

B. Spent Fuel Pool Reracking Construction Activities

The restriction on movement of heavy loads over spent fuel ensures that in the event a heavy load is dropped:

1. The radiological consequences due to complete rupture of all spent fuel assemblies in the spent fuel pool and the cask pool (480 maximum), will remain below (less than 25% of) the exposure limits of 10 CFR 100 for offsite doses, as long as spent fuel has received a minimum of 88 days decay time. This analysis takes no credit for fuel handling building filters (i.e., the fuel handling building hatches are open).

2. Any possible distortion of all fuel assemblies and racks will not result in a critical array and K_{eff} will remain less than 0.95, as long as fuel is stored per Technical Specifications 5.6, "Fuel Storage," and 3.9.13, "Spent Fuel Pool Boron Concentration."

3/4.9.8 SHUTDOWN COOLING AND COOLANT CIRCULATION

The requirement that at least one shutdown cooling train be in operation ensures that (1) sufficient cooling capacity is available to remove decay heat and maintain the water in the reactor pressure vessel below 140°F as required during the REFUELING MODE, and (2) sufficient coolant circulation is maintained through the reactor core to minimize the effects of a boron dilution incident and prevent boron stratification.

The requirement to have two shutdown cooling trains OPERABLE when there is less than 23 feet of water above the reactor pressure vessel flange, ensures that a single failure of the operating shutdown cooling loop will not result in a complete loss of decay heat removal capacity. With the reactor vessel head removed and 23 feet of water above the reactor pressure vessel flange, a large heat sink is available for core cooling, thus in the event of a failure of the operating shutdown cooling train, adequate time is provided to initiate emergency procedures to cool the core.

ATTACHMENT D

PROPOSED TECHNICAL SPECIFICATION BASES

SAN ONOFRE UNIT 3

3/4.9.6 REFUELING MACHINE

The OPERABILITY requirements for the refueling machine ensure that: (1) the refueling machine will be used for movement of all fuel assemblies including those with a CEA inserted, (2) each machine has sufficient load capacity to lift a fuel assembly including those with a CEA, and (3) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

Five finger CEAs are removed from the reactor vessel either along with the associated fuel bundle utilizing the refueling machine or can be removed without the associated fuel bundle utilizing the refueling machine auxiliary hoist. The four finger CEAs are inserted through the upper guide structure with two fingers in each of the two adjacent fuel bundles in the periphery of the core. The four finger CEAs are either removed with the upper guide structure and lift rig or can be removed with separate tooling prior to upper guide structure removal utilizing the auxiliary hoist of the polar crane or the refueling machine auxiliary hoist.

Coupling and uncoupling of the CEAs and the CEDM drive shaft extensions is accomplished using one of the gripper operating tools. The coupling and uncoupling is verified by weighing the drive shaft extensions.

3/4.9.7 FUEL HANDLING MACHINE - SPENT FUEL STORAGE BUILDING

A. Refueling Operations

The restriction on movement of loads in excess of the nominal weight of a fuel assembly, CEA and associated handling tool over other fuel assemblies in the storage pool ensures that in the event this load is dropped (1) the activity release will be limited to that contained in six fuel assemblies, and (2) any possible distortion of fuel in the storage racks will not result in a critical array. This assumption is based on the calculated results which demonstrate that, with credit taken for the fuel handling building filters, the offsite doses would be well within (less than 25%) the 10 CFR 100 limits.

B. Spent Fuel Pool Reracking Construction Activities

The restriction on movement of heavy loads over spent fuel ensures that in the event a heavy load is dropped:

1. The radiological consequences due to complete rupture of all spent fuel assemblies in the spent fuel pool and the cask pool (480 maximum), will remain below (less than 25% of) the exposure limits of 10 CFR 100 for offsite doses, as long as spent fuel has received a minimum of 88 days decay time. This analysis takes no credit for fuel handling building filters (i.e., the fuel handling building hatches are open).

2. Any possible distortion of all fuel assemblies and racks will not result in a critical array and K_{eff} will remain less than 0.95, as long as fuel is stored per Technical Specifications 5.6, "Fuel Storage," and 3.9.13, "Spent Fuel Pool Boron Concentration."

3/4.9.8 SHUTDOWN COOLING AND COOLANT CIRCULATION

The requirement that at least one shutdown cooling train be in operation ensures that (1) sufficient cooling capacity is available to remove decay heat and maintain the water in the reactor pressure vessel below 140°F as required during the REFUELING MODE, and (2) sufficient coolant circulation is maintained through the reactor core to minimize the effects of a boron dilution incident and prevent boron stratification.

The requirement to have two shutdown cooling trains OPERABLE when there is less than 23 feet of water above the reactor pressure vessel flange, ensures that a single failure of the operating shutdown cooling loop will not result in a complete loss of decay heat removal capacity. With the reactor vessel head removed and 23 feet of water above the reactor pressure vessel flange, a large heat sink is available for core cooling, thus in the event of a failure of the operating shutdown cooling train, adequate time is provided to initiate emergency procedures to cool the core.