4.0 DESIGN FEATURES

4.1 SITE

A. The Chin Shan Nuclear Power Station is located on a 20 hectare site at Chien Hua Li, Shihmin District, New Taipei City, at longitude 121° 35’14” E by latitude 25° 17’9” N and longitude 121° 35’15” E by latitude 25° 17’12 ” N for unit 1 and unit 2 respectively on the north extremity of Taiwan. The site is about 28 kms northeast of Taipei.

B. The nearest point on the property line from a point of potential gaseous release, with the exception of the ocean shoreline, is approximately 0.8 km. This distance is radius of the site exclusion area as defined in US 10 CFR 100.3.

4.2 REACTOR

A. The reactor core shall contain 408 fuel assemblies, each fuel assembly may contain different configurations of fuel rods and water rods clad with zircaloy-2 except that limited substitution of zircaloy-2 or stainless steel filler rods or open water channels for fuel rods may be made in fuel assemblies if justified by cycle specific reload analyses using an approved methodology. Should (1) more than 4 repaired assemblies or (2) more than 2 replaced rods in any assembly or (3) 2 replaced rods do not separate from each other at least 3 rods position in an assembly, be replaced per refueling, a report describing the said assemblies shall be submitted to the ROCAEC for approval 6 months prior to cycle startup. Each fuel rod shall have a nominal active fuel length of 150 inches. The reload fuel shall be similar in physical design to the initial core loading.

B. The reactor core contains 97 cruciform-shaped control rods as described in Section 4.1.3 of the FSAR.

4.3 REACTOR PRESSURE VESSEL

The reactor pressure vessel stress analysis and LOCA combinations are described in the tables of 3.9.a. The applicable design codes are described in Section 5.2.1.4 of the FSAR.

4.4 CONTAINMENT

A. The principal design parameters and characteristics for the primary containment are given in Table 6.2-1 of the FSAR.

B. The secondary containment is as described in Section 1.2.2.3.1 and the applicable codes are as described in Section 3.8.1.2 of the FSAR.

C. Penetrations to the primary containment and piping passing through such penetrations are designed in accordance with standards set forth in Sections 3.8.2.3 and 3.9 of the FSAR.

4.5 FUEL STORAGE

A. The new fuel storage facility is designed so that the Keff in a fully flooded condition is ≤ 0.95 and at the (low) density corresponding to the highest reactivity (optimum moderation) is ≤ 0.98 as described in Section 9.1.1 of the FSAR.

B. The Keff of the spent fuel storage pool is ≤ 0.95 under normal conditions, and ≤ 0.95 during abnormal conditions as described in Section 9.1.2 of the FSAR.

4.6 SEISMIC DESIGN

The secondary containment and all engineered safeguards are designed on basis of dynamic analysis using acceleration response spectrum curves which are normalized to a ground motion of 0.15g horizontal and 0.1g vertical for the Operating Basis Earthquake, and .3g horizontal and .2g vertical for the Design Basis Earthquake.

This is discussed in Section 3.7.1.1 and 3.8.1.3.4.