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1.1.2 Failure of a Steam Turbine Rotor

On July 12, 1974, a high temperature rotor of a steam turbine located at the Gallegos Turbine Plant burst suddenly during a routine start-up operation. A schematic of the facts of the actual fractured pieces of the rotor are shown in Figures 1.2 and 1.3. The fractographic analysis revealed two elliptical flaws in the bore region of the rotor when it failed. These flaws originated from clusters of MnS inclusions by creep-fatigue and sub-