Secondary Beam Lines in the Hadron Hall at J-PARC

HIROYUKI NOUMI, KEIZO AGARI, ERINA HIROSE, MASAHARU IEIRI, JUN IMAZATO, YOHJI KATOH, MICHIHUMI MINAKAWA, YOSHINORI SATO, SHINYA SAWADA, YOSHIHIRO SUZUKI, HITOSHI TAKAHASHI, TOSHIYUKI TAKAHASHI, MINORU TAKASAKI, KAZUHIRO TANAKA, AKIHIRO TOYODA, YOSHIKAZU YAMADA, YUTAKA YAMANOI, HIROAKI WATANABE, High Energy Accelerator Research Organization (KEK), HADRON BEAM LINE GROUP TEAM — A beam-line facility for nuclear and particle physics experiments, Hadron Hall, is being constructed at J-PARC in Tokai, Japan. A high-power proton beam of 750 kW from the 50-GeV Proton Synchrotron will be extracted to the Hadron Hall. High-intensity secondary kaons, pions, anti-protons, etc will be produced by irradiating a target with the primary proton beam. Huge amount of power deposit at the target will arise very high radiation and heated environment. Thus, beam-line equipments around the target must be resistant against high radiation dose and heat deposit. Since only a target, T1, will be placed in the Hadron Hall at the beginning, some secondary beam lines are designed to share T1 in order that various experiments can be carried out efficiently. Unique layout and performances of the secondary beam lines and relevant R&D works will be presented.

Hiroyuki Noumi
High Energy Accelerator Research Organization (KEK)

Date submitted: 25 May 2005