

## Scientific issues in the ban injunction to the Oi nuclear power plant

KOKETSU, Kazuki<sup>1\*</sup>

<sup>1</sup>Earthquake Research Institute, University of Tokyo

The issues of science and technology in the verdict can be summarized as follows: (1) The cliff edge (if ground motion is beyond this, the plant will lose overall safety) was determined to be 1,260 gal in the stress test. It is impossible to assume no chance of ground motion larger than the cliff edge based on a sound scientific basis. (2) The design basis (if ground motion is beyond this, S-class structures will lose functional safety) was determined to be 700 gal in the stress test. Ground motion between 700 and 1260 gal can possibly occur, but any measure may not be applied at the worst because of difficulties in event grasp, multiple case, training, and so on. (3) The seismic safety regulation does not require structures and facilities of B or C class to keep functional safety under the design basis ground motion. Therefore, even in a case of ground motion smaller than 700 gal, external electricity and main water supply, which are not ranked at S class, have danger to lose functional safety. (4) Because a pool of nuclear waste does not have such a firm confining structure as a pressure vessel for a reactor, it has danger to emit radioactive substances.

Among the above, (1) and (2) are emergencies at the worst, so that science cannot deny the occurrence and also cannot prove their certain occurrence in the future. On the other hand, (3) and (4) can be thought to have sure danger. When we consider only (3) because of the lack of concreteness in (4), we find it quite probable for ground motion smaller than 700 gal to occur and for external electricity to be damaged. In addition, we recall that damage to external electricity was one of causes of the Fukushima Daiichi accident, and therefore it can be scientifically correct to assume the Oi nuclear power plant to have danger to suffer an accident. Furthermore, this point in the verdict suggests the Nuclear Regulation Authority's decision of keeping external electricity at B class to be wrong, though two independent routes have been required after the Fukushima Daiichi accident.

Keywords: Fukui district court, Oi nuclear power plant, ban injunction, issue of science and technology