Puzzle for January 18, 2002

A company has 3 large systems, *zeus*, *poseidon*, and *hades*, on which it houses sensitive data. A consultant is hired to check the security of *zeus*. The contract says that all work is to be performed on site. The consultant is given accounts on all three systems, because the systems are networked together.

1. The consultant probes *zeus* from *poseidon* and, as a result, suspects several security flaws. He tries to exploit some to determine if the flaws are actually present. Two of the tests are successful. Did the consultant breach his agreement?
2. In the process of testing *zeus* from *poseidon*, the consultant finds evidence of several security problems on *poseidon*. To validate these flaws, he tries to exploit them, and succeeds in breaching *poseidon*'s security. Did the consultant breach his agreement?
3. The consultant obtains an encrypted file from *zeus*, takes it to his home system, and later that night deciphers it to demonstrate to himself that the cipher is easy to break. He then repeats the decryption at the site the next day. The company finds out that he took the encrypted file home, and decrypted it there. When asked why, he explains that *zeus* and *poseidon* were too slow to perform the analysis, so he took the file home to use his home system. This action helped him provide a better analysis of the security of the system he was hired to analyze. Did the consultant breach his agreement?