From: [redacted]
To: SizewellC
Subject: Subsequent representation 2229 Registration no. 20025671
Date: 08 July 2021 18:56:21
Attachments: Mud tectonis summary 2.png

Dear Inspectorate

New evidence has come to light on a topic that I raised previously in my written submission (ref. 2229) to you, about the instability of the geology under the concrete reactor base for Sizewell C & D.

I hope that you will accept this material as an addition to my submission:-

EDF engineers reports assume a stable substrate for the new buildings and reactor base. This assumption is challenged by new academic studies of local mud tectonics. These show how strata of London Clay can become plastic, giving and moving at unknown yield points in response to tidal and current pressures. As sea levels rise and tidal pressures change this has implications for large civil engineering projects.

The studies were done at Bawdsey, Suffolk by geologists Gill Apps and Frank Peel of the Bureau of Economic Geology at the University of Texas, for the International Association of Sedimentologists.

Attached is their summary of this study, the full presentation can be viewed via the website: sedsonline.com

Yours faithfully

Michael Wade

Deposition of basal Pleistocene, warm-water clastics (Red Crag) on top of Paleocene-Eocene marine mudrocks (London Clay s.l.) triggered a phase of intense syndepositional mud tectonics. The Red Crag was deposited in subsiding mud-withdrawal basins, separated by rising mud diapirs and mud ridges. Mud deformation ranged from plastic flow to liquefied flow, with extrusion of allochthonous mud sheets. Tidal bedforms in the Red Crag allow us to estimate the duration of deposition and mud mobilization. As the mud dewatered, upward water flow though the Red Crag changed the color of the clastic sediments, revealing the geometry of the fluid-escape pathways, with narrow conduits feeding up into surface blow-out craters. The deformation has previously been interpreted as a later, postdepositional, process during the subsequent periods of glaciation (cryoturbation), but it is clearly syndepositional with the non-glacial Red Crag. This may have important consequences for civil engineering, because it indicates that this level of the London Clay s.l. has been prone to catastrophic failure and even liquefaction (akin to catastrophic quick clay failures of coastal Scandinavia) in conditions similar to the present day. However, large engineering projects on the same substrate (offshore windfarms, nuclear power stations, etc.) have been constructed on the assumption that the mud deformation is a product of glacial conditions.