IChemE Response to Regulatory proposals for Carbon Capture Utilisation and Storage and offshore hydrogen production

To whom it may concern,

I wish to submit on the proposed regulatory changes regarding Carbon Capture Usage and Storage (CCUS) facilities and hydrogen production on behalf of the Institute of Chemical Engineers (IChemE).

About IChemE

IChemE represents over 33,000 registered chemical, biological, and process engineers including in CCUS and hydrogen production. Maintaining high levels of health and safety in these fields is an organisational goal for us so we appreciate the opportunity to submit on the proposed changes to the safety controls imposed on CCUS facilities and hydrogen production.

General approach to safety in relation to oil and gas industries

As stated in the consultation document, the UK is entering an energy transition phase. In the same manner that the oil and gas industry grew and became regulated over time, so should any new industry of a similar scale and risk profile, especially one which plans to re-use existing oil and gas infrastructure. It is important that the hard-earned lessons from the oil and gas industry are not forgotten as part of this energy transition. Given the similarities between the CCUS and oil and gas industries, the existing regulations are an appropriate starting point. The existing regulator is also organised to manage such processes and this consultation shows an encouraging willingness to adapt to meet an, as yet, unknown phase of operation.

The overlap between the oil and gas industry and CCUS also provide the opportunity to minimise compliance costs by avoiding duplication. The Offshore Installations (Offshore Safety Directive) (Safety Case etc) Regulations 2015 generated huge costs to the oil and gas industry, not just in the human resource to develop the supporting risk documentation, but in construction of related physical barriers to manage the risks at site. CCUS & Hydrogen energies are advantaged in being able to piggy-back the controls resulting from this work, however the regulator should also make available the supporting risk documentation to the new operators as a basis and means to ease the financial barrier in developing their own cases for complying with necessary safety regulation.

CO_2 proposals

Regarding Question 1, we support the proposal to treat CO_2 as a dangerous fluid for the purposes of the additional duties of a major hazard pipeline in the Pipeline Safety Regulations 1996. The consultation document clearly outlines the risks associated with the transport of CO_2 and these risks are also recognised in existing transportation legislation (sea, air, road, rail). However, the quantity of CO_2 being captured, transported, and injected in CCUS facilities is significantly larger than from current applications therefore the risk, including types of loss of containment during any of these phases, is also significantly larger. Facility operators need to consider hazards such as specific pipeline metallurgic reactions to CO_2, chemical injection etc in ageing infrastructures. All these risks require identification, assessment, and mitigations to protect people exposed.

Please get in contact if you would like more information on our submission.

Kind regards,
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