ICS 27.120.30
CCS F46

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 13698-2015

Replacing GB/T 13698-1992

Determination of total hydrogen in uranium dioxide pellets

二氧化铀芯块中总氢的测定

Issued on: July 3, 2015 **Implemented on: February 1, 2016**

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Standardization Administration of China

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules. This standard replaces GB/T 13698-1992 "uranium dioxide pellets - Determination of total hydrogen," compared with the GB/T 13698-1992 main technical Surgery changes are as follows:

--- The "hydrogen integral time 120s" to "integration time is determined by the test";

--- Increased provisions recommendation sample heating temperature upper limit;

--- Standardized precision representation method;

--- Check the electrode increases the furnace temperature (refer to normative Annex A);

--- Increasing the method of determining the integration time (see Information Appendix B). This standard by the National Standardization Technical Committee on Nuclear Energy (SAC/TC58) and focal points. This standard was drafted. China Jianzhong Nuclear Fuel Limited. The main drafters of this standard. meterial stop, Xu Jianping, Chen Changyou. This standard replaces the standards previously issued as follows:

--- GB/T 13698-1992. Determination of uranium dioxide pellets total hydrogen

1 Scope

GB/T 13698-2015 is the Chinese national standard on determination of total hydrogen in uranium dioxide pellets, in the field of energy and heat transfer engineering. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 3 July 2015 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 February 2016. Classification: ICS 27.120.30, CCS F46. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the

tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the method of uranium dioxide pellets - Determination of total hydrogen feed, reagents and materials, equipment, sample analysis step, the results Calculation and precision. This standard applies to the determination of uranium dioxide pellets total hydrogen measurement range of the mass fraction of hydrogen is 0.15μg/g ~ 20.00μg/g. Uranium dioxide pellets heating temperature exceeds 2360 °C, the significant increase in the consumption of carbon monoxide oxidizer. Ensuring complete release of hydrogen Controlling the heating temperature of the case does not exceed 2360 °C can effectively reduce the consumption of carbon monoxide oxidizer.

2 Method summary

Uranium dioxide pellets sample was placed in a graphite crucible under an inert atmosphere heated to above 2100 °C, release hydrogen. Remove the interference group After hours, the hydrogen separated from the column and then measured by a thermal conductivity detector.

3 Reagents and materials

3.1 argon, phi (Ar) >=99.99%.

3.2 hydrogen, phi (H2) >=99.99% hydrogen content or with a calibration gas.

3.3 Schutz reagent (carbon monoxide oxidizer), particle size 1mm ~ 2mm.

3.4 Ascarite, dried particles size 0.5mm ~ 0.8mm.

3.5 over anhydrous magnesium perchlorate, mass fraction of water of not more than 8%, particle size of 1.0mm ~ 1.6mm.

3.6 Standard substance hydrogen, hydrogen in steel standard material, substance or other equivalent standards.

3.7 tin sheet, chemically pure.

3.8 graphite crucible, match the hydrogen analyzer electrode furnace.

3.9 column, filled with 5A molecular sieves for hydrogen separation (R) is greater than 1.

4 Equipment

4.1 automatic hydrogen tester, including a temperature can reach 2400 °C or more electrodes furnace (check electrode furnace temperature see Appendix A), a A separate release of gas chromatography and chemical systems, a measurement of hydrogen thermal conductivity detector and a number of secondary purification systems.

4.2 Balance, dividing the value of 1mg.

5 Sample

The specimen shall be a complete piece of pellets, the surface meets the technical requirements for products, stored in a glass bottle.