SOURCES AND EVALUATION OF WATER MODERATION IN LOW ENRICHED UO_2 POWDER PROCESS

EH/RAS-71-124

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D/5

TABLE ON CONTENTS

TABLE ON CONTENTS

Page 2

1.0 Summary

Sources of water moderation in the low enriched UO_2 powder process were evaluated. Drawing D-5007-2016 was prepared in order to outline the process and better locate possible problem areas. Each step of the process was reviewed and possible water sources evaluated. The evaluation in section 3.0 below lists the items of this process

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2.0 Sources of Moderation

A. Plant Water

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B.

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C.

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The different air and vacuum systems used are shown on drawing D-5007-2016 and are listed below.

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3.0 Discussion

Under standard operating conditions, moderation problems do not exist in the low enriched UO_2 powder process. The low enriched powder is

In reference to drawing D-5007-2016 attached, each step of the process is discussed in relation to moderation problems. Attached are basic data calculations used in this discussion.

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A.

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4. Other temperature, pressure, and N_2 equipment are a part of the system, but are not discussed here.

B.

c.

D.

E.

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F.

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G.

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H.

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I.

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4

J.

4

K.

L.

M.

N.

O.

P.

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4.0 Conclusion

The accidental loss of moisture or moderation control is considered unlikely. At least two equipment failures or one equipment failure and several administrative errors would be necessary to introduce [redacted]] 4

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Hygrometer and Alarm

The moisture detector installed in the process air header monitors the dew-point of the air from +70° F to -170° F. The dew-point is indicated on the front of the instrument. An alarm connected to the instrument is located in the Oxide Plant control room. This audible, visual alarm is part of the annunciator panel. A second audible, visual alarm is

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Sensor output is measured with high quality all solid state electronic circuitry designed to provide excellent accuracy and resolution, and maximum stability.

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Ex. 4

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Ex. 4

Entire Page
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Ex 4

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Ex. 4