



**NAC-STC WV/HBU Amendment Request Meeting  
(Non-Proprietary Version)**

**Date:** August 14, 2014

**Docket No.:** 71-9235

# Agenda

- Introduction
- Overview of NAC-STC high-burnup amendment
- Summary of cladding integrity approach and key results
- Discussion of outstanding areas of concern
- Determination of path forward and schedule
- Closing remarks and summary of follow-up items

# Introduction

- Application for the revision of CoC No. 9235 submitted November 26, 2013 (West Valley/HBU Amendment)
- Request for Supplemental Information (RSI) issued February 12, 2014
- NAC response to RSI submitted April 24, 2014
- Additional questions verbally communicated to NAC June 25, 2014
- NAC responded to additional questions July 11, 2014 via email
- NAC requested a face to face meeting

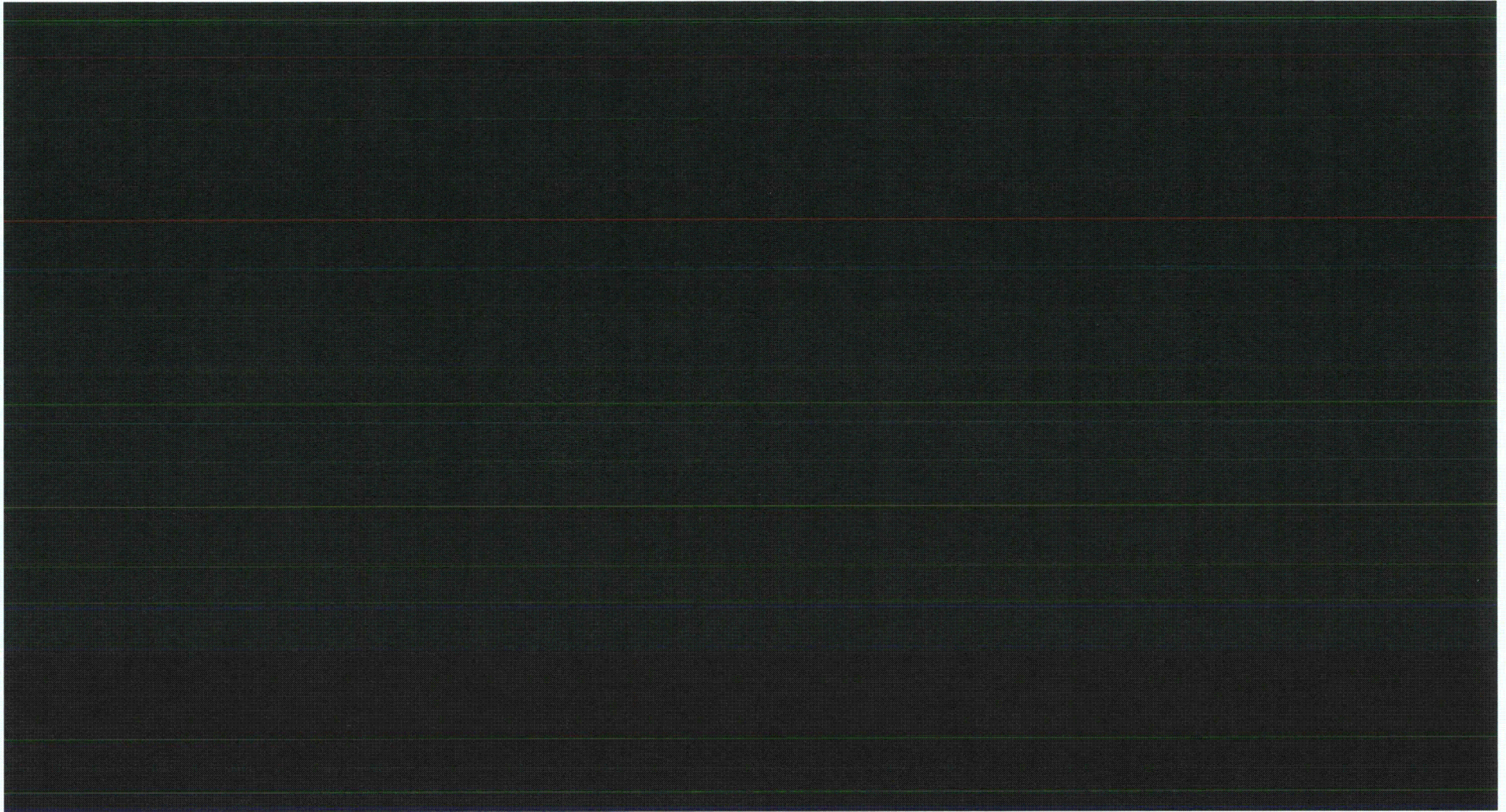


## NAC-STC Application (HBU Fuel)

- Key Aspects of High Burn-up Submittal
  - Adds PWR 17x17 fuel, burnup from 45,000 – 60,000 MWd/MTU directly loaded into the STC as allowable contents for transport (no 10CFR72 storage)
  - Increases package heat load from 22.3kW to 24.0kW
  - Enables use of either the “redwood” or the “mostly balsa” impact limiter (already licensed for NAC-MPC for CY) to be utilized for the directly loaded HBU fuel transport configuration
  - Enables an alternate metal matrix neutron absorber to be utilized with a minor variation in fuel tube dimensions



## NAC-STC Application (HBU Fuel) (cont.)





## Cladding Assessment – Licensing Approach



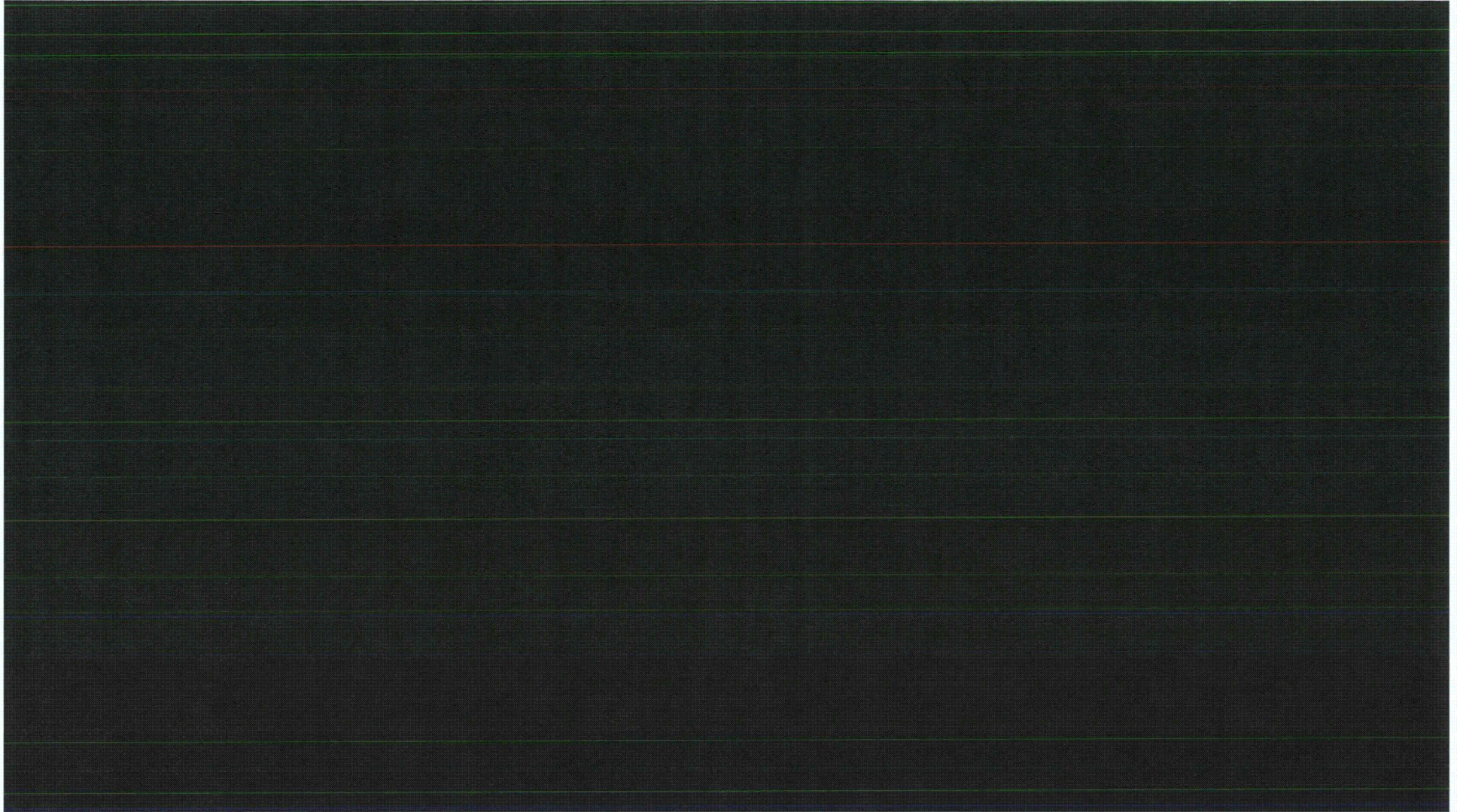


## Cladding Assessment – Criteria

- Cladding temperature effects
  - ISG-11, Rev. 3 requires maximum cladding temperature to be less than 400°C and less than 10 cycles with temperature variations less than 65°C each

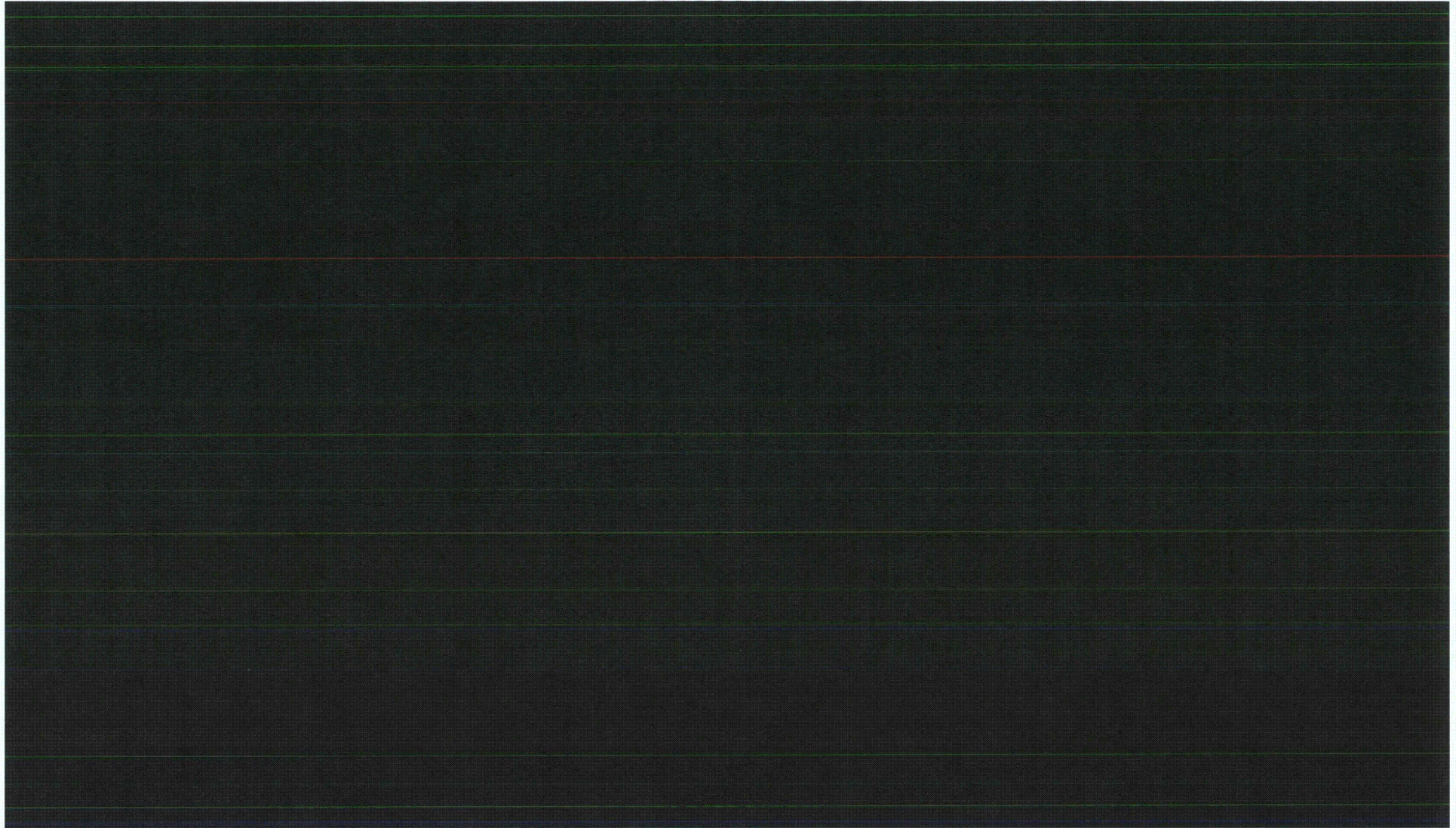


## Cladding Assessment – Vacuum Drying





## Cladding Assessment - Steady State Temperature Results (°C)





## Cladding Assessment –



## Cladding Assessment –

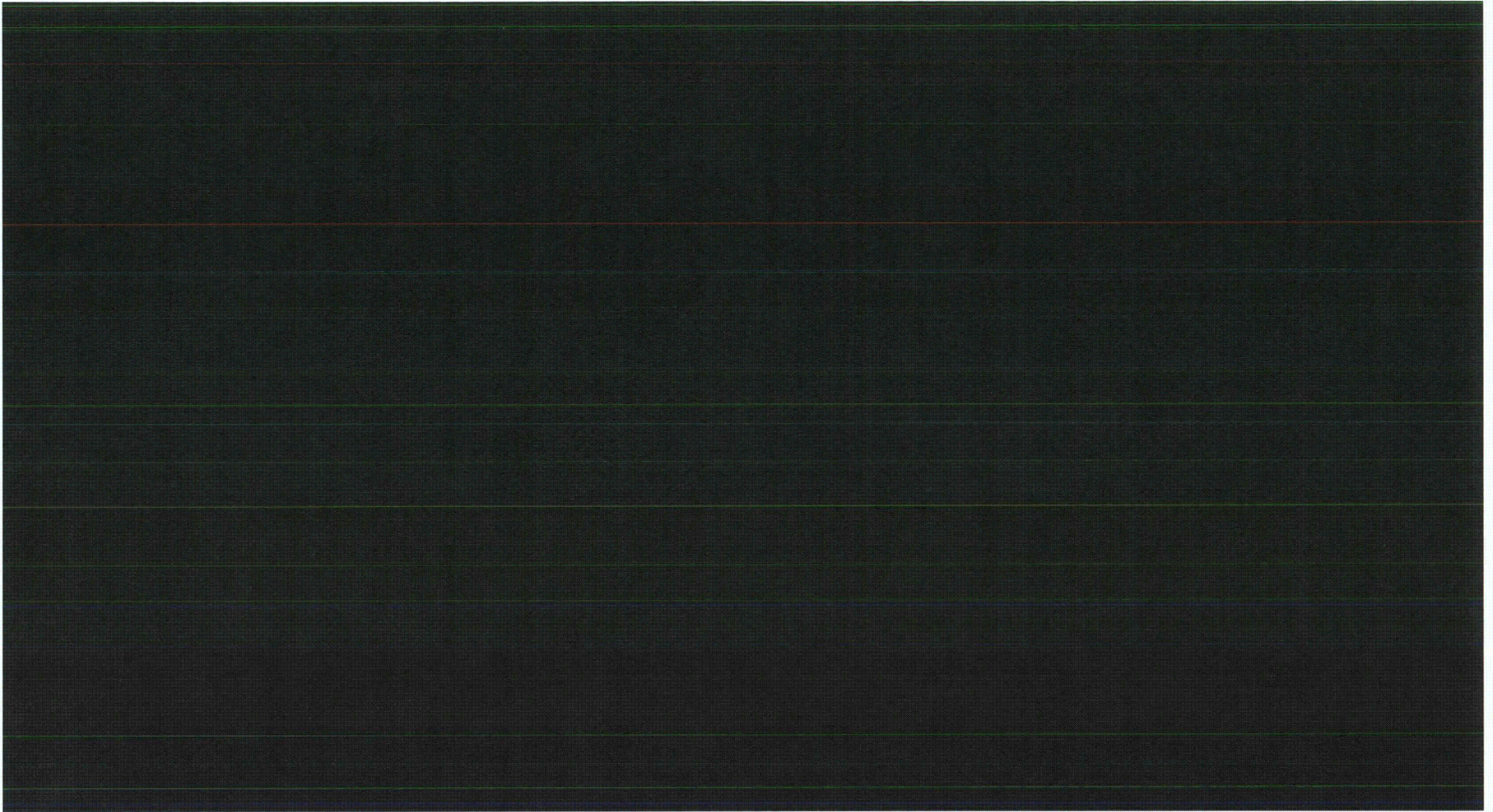


## Cladding Assessment - Hydrogen Dissolution and Precipitation in Zircaloy Cladding



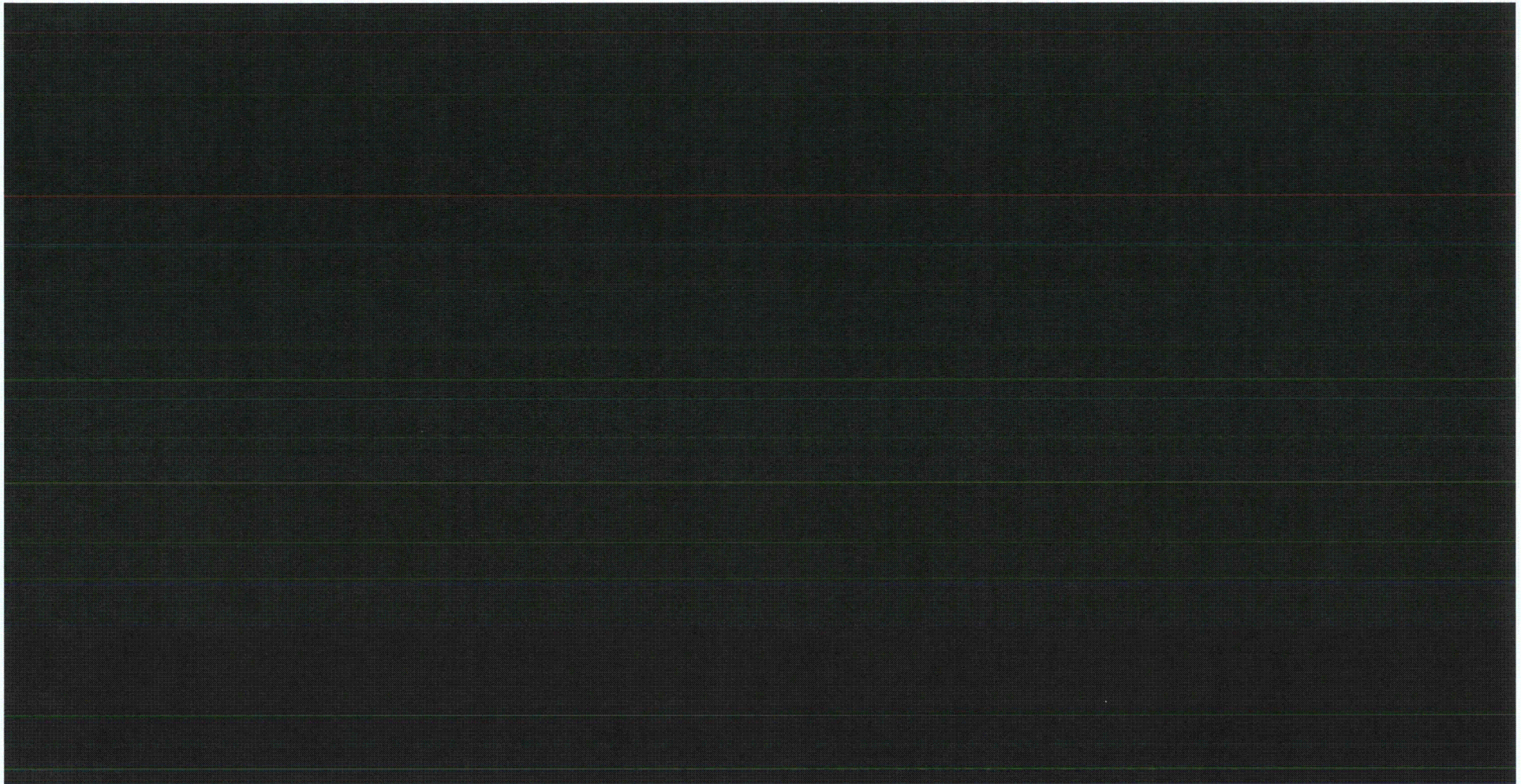


## Cladding Assessment – Discussion of Results



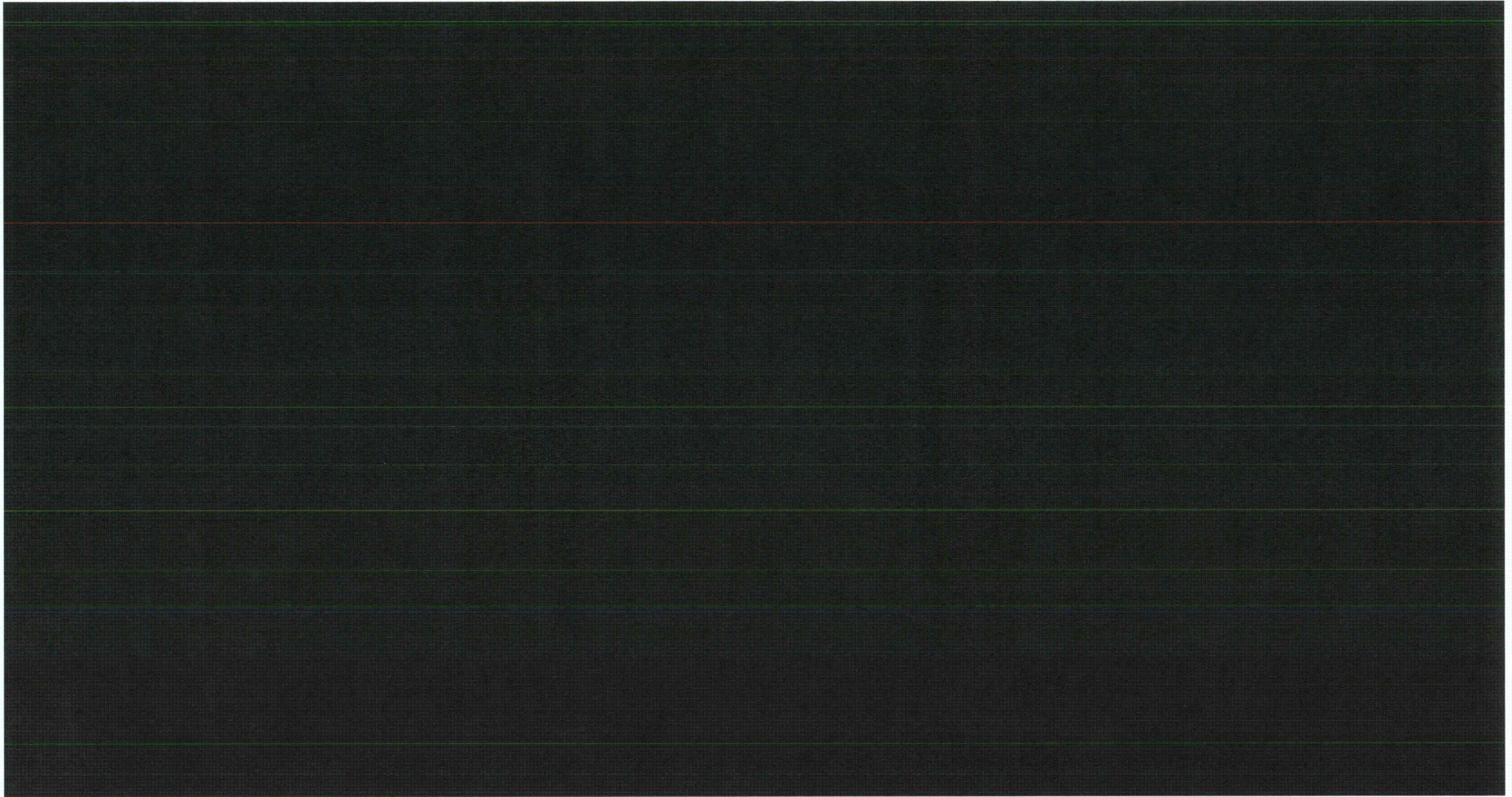


## Cladding Assessment – STC-HBU Fuel Cladding Material Performance Summary





## Discussion of Areas of Concern





## Discussion of Areas of Concern (cont.)





## Discussion of Areas of Concern (cont.)



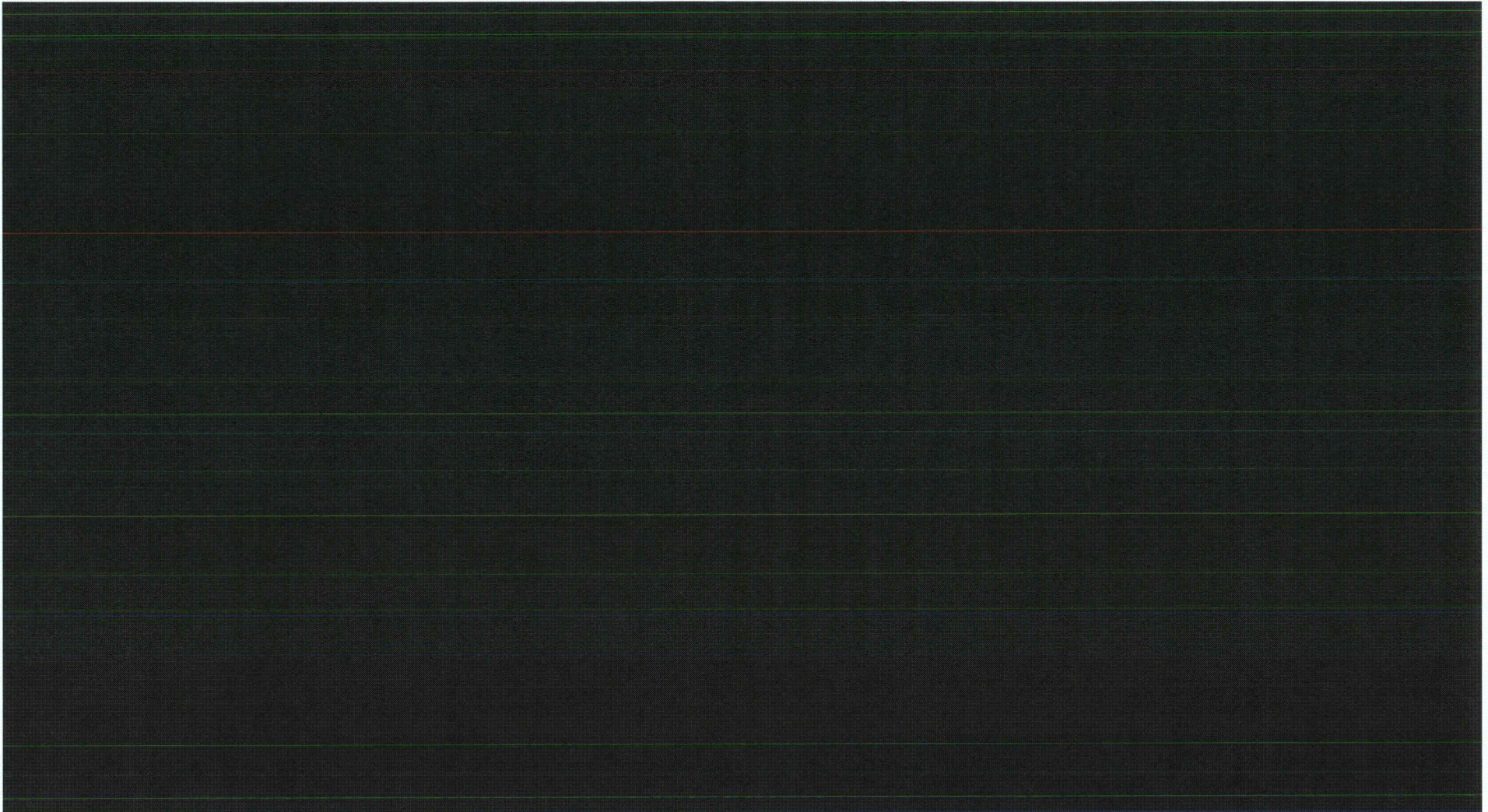


## Discussion of Areas of Concern (cont.)



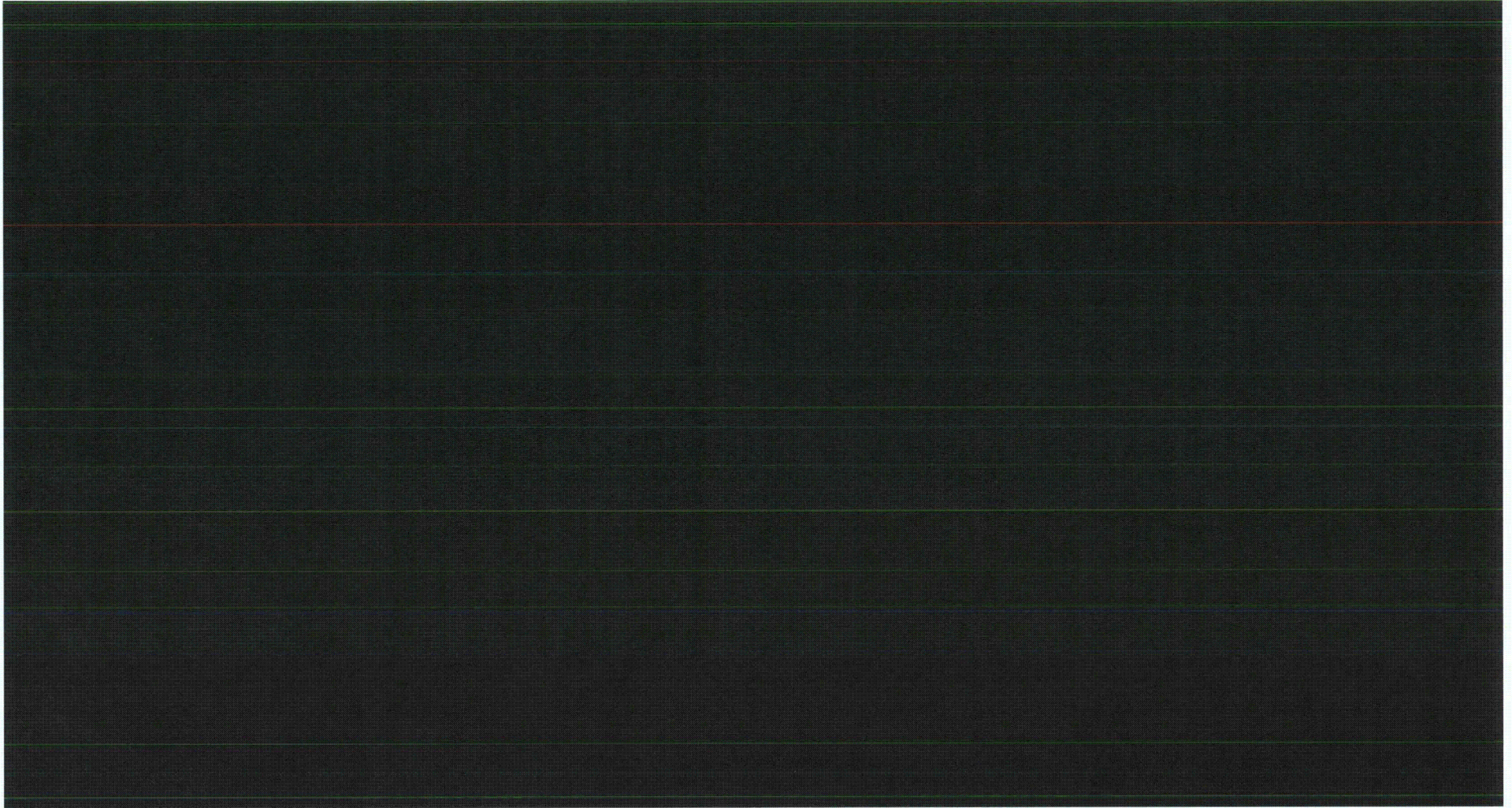


## Discussion of Areas of Concern (cont.)



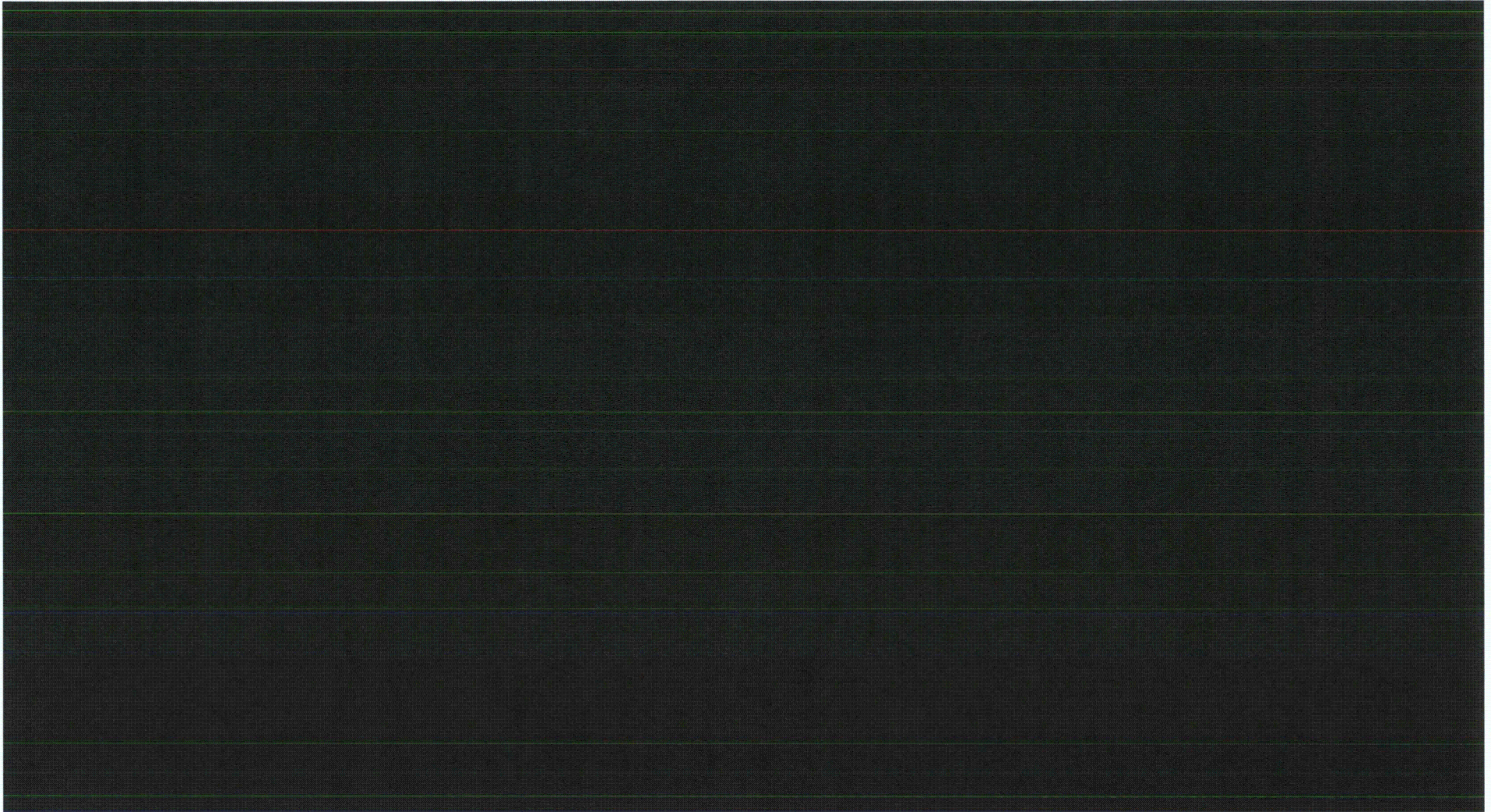


## Discussion of Areas of Concern (cont.)





## Discussion of Areas of Concern (cont.)





## Discussion of Areas of Concern (cont.)



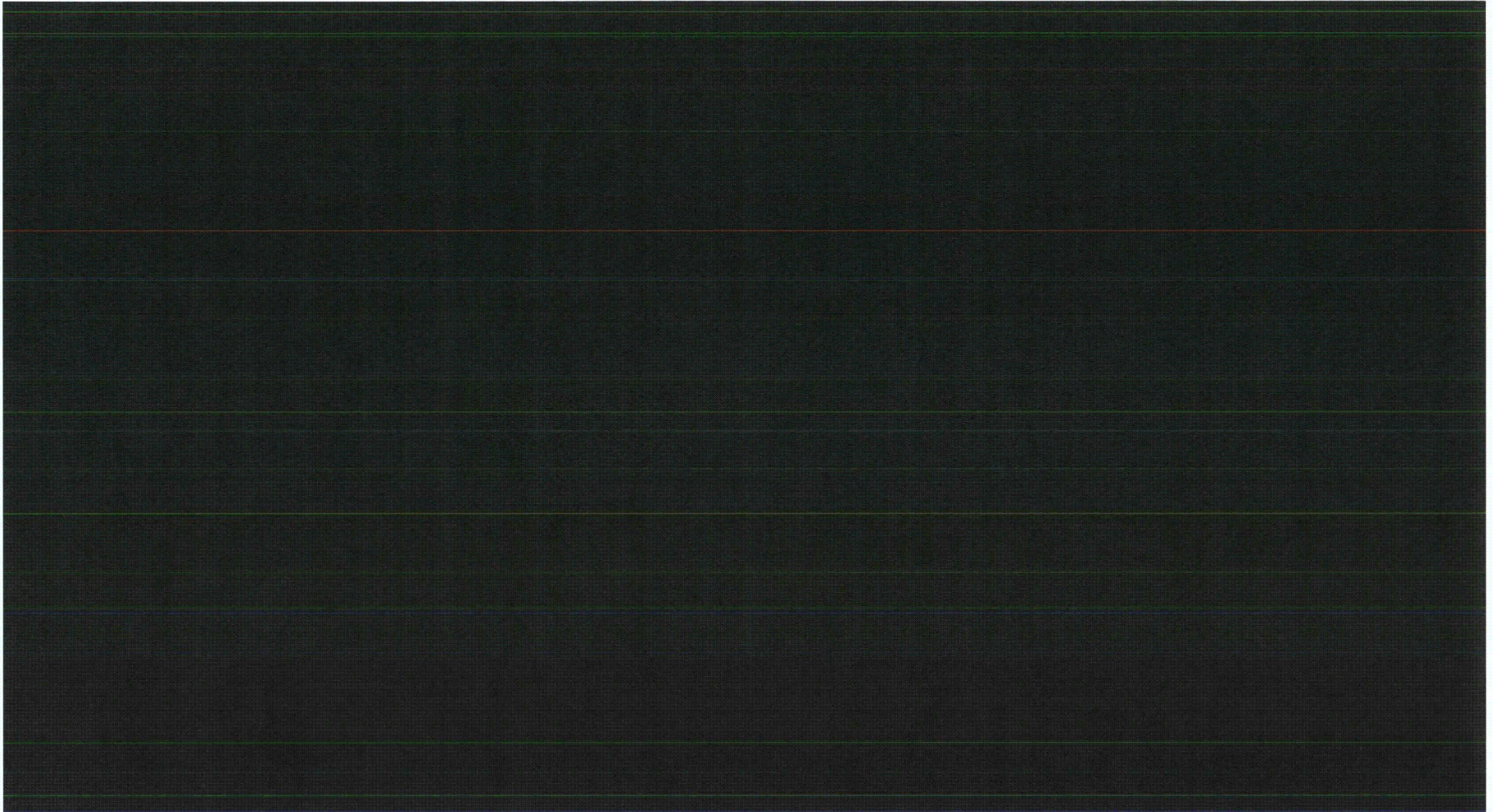


## Discussion of Areas of Concern (cont.)



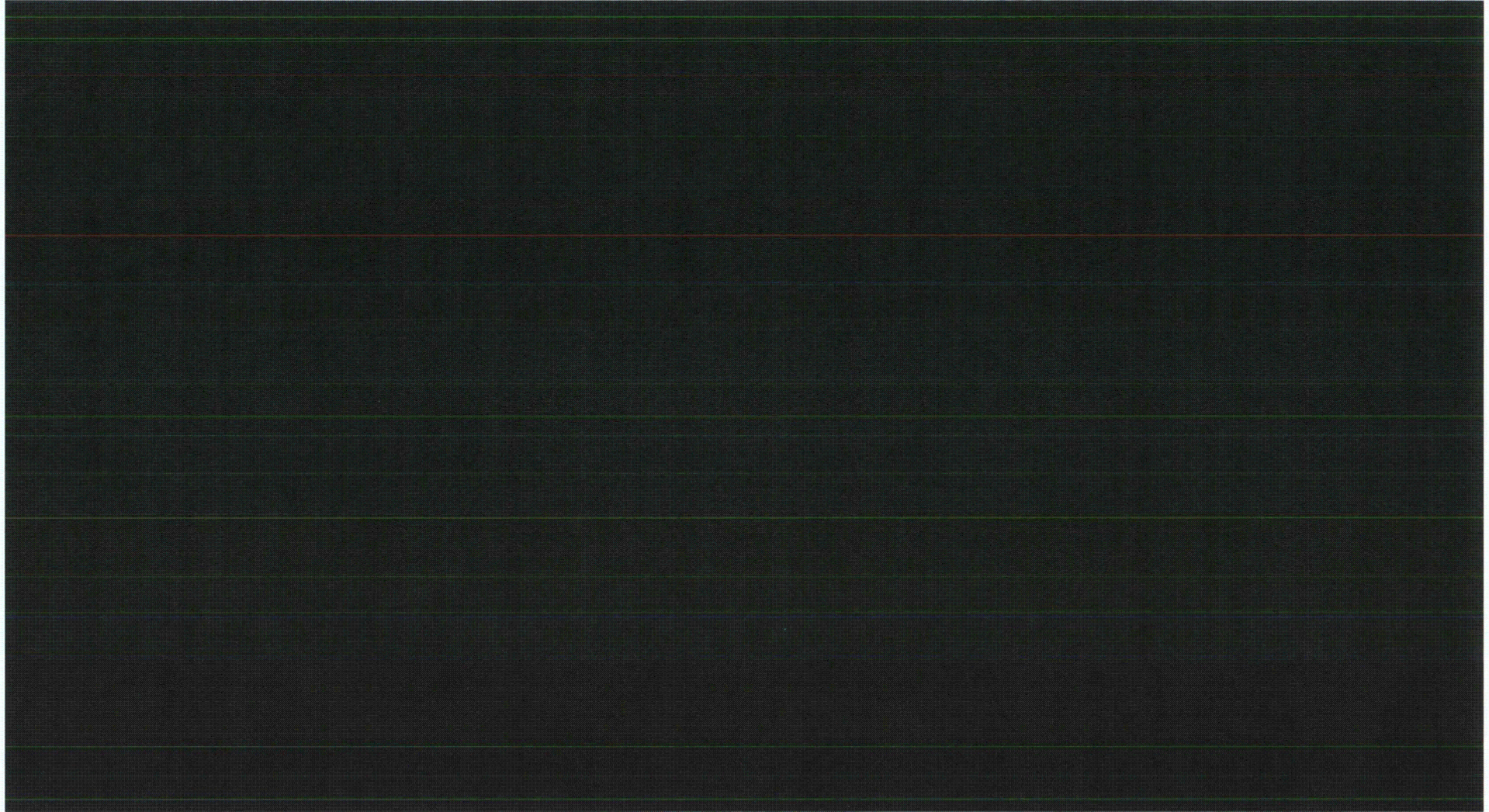


## Discussion of Areas of Concern (cont.)





## Discussion of Areas of Concern (cont.)





## Discussion of Areas of Concern (cont.)





# Path Forward and Schedule

- Determination of path forward
- Schedule



# **CLOSING REMARKS and FOLLOW-UP ITEMS**