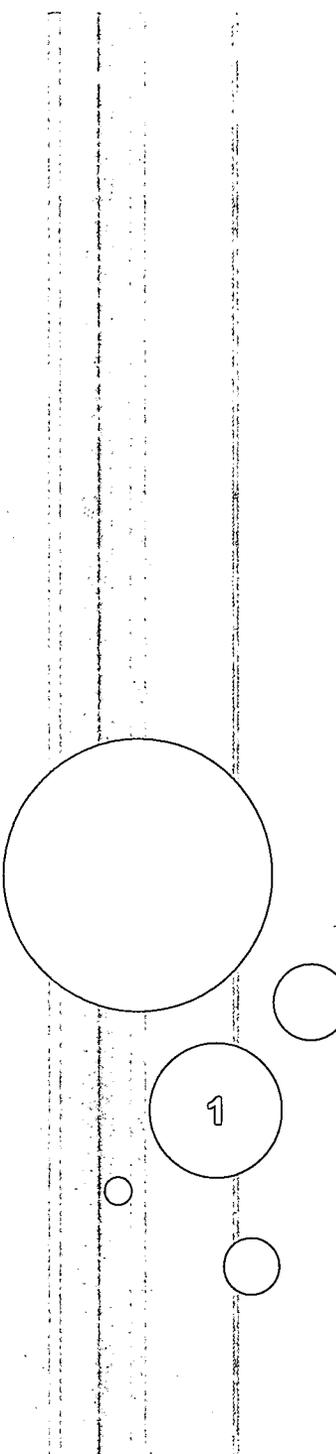


ENCLOSURE 4

Westinghouse Non-Proprietary Class 3

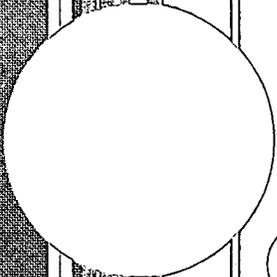
“Experimental Results and Benchmarked Analyses” – (Non-Proprietary)



# **EXPERIMENTAL RESULTS AND BENCHMARKED ANALYSES**

**Amit Varma**  
**Purdue University**

1



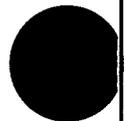
2

# ○ OUT-OF-PLANE SHEAR TEST

Experimental Results and Benchmarked Models

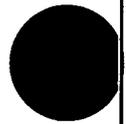
# EXPERIMENTAL RESULTS

a, b, c



# EXPERIMENTAL RESULTS

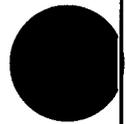
a, b, c



# SPECIMEN & SETUP

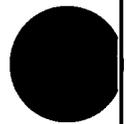


a, b, c



# DIAGONAL CRACK

a, b, c



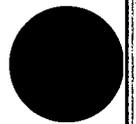
# EXPERIMENTAL RESULTS

a, b, c



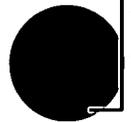
# EXPERIMENTAL RESULTS

a, b, c



# EXPERIMENTAL RESULTS

a, b, c



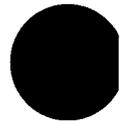
# EXPERIMENTAL RESULTS

a, b, c



# EXPERIMENTAL RESULTS

a, b, c





# EXPERIMENTAL RESULTS

a, b, c



# EXPERIMENTAL RESULTS

a. b. c.



# FINITE ELEMENT MODEL DETAILS

a b c



# MATERIAL PROPERTIES



a, b, c



# STEEL MATERIAL PROPERTIES

a, b, c



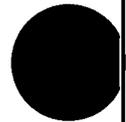
# MATERIAL PROPERTIES

a, b, c



# MATERIAL PROPERTIES

a, b, c



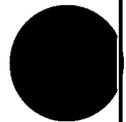
# MATERIAL PROPERTIES

a, b, c



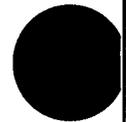
# MATERIAL PROPERTIES

a, b, c



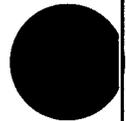
# FINITE ELEMENT MODEL

a, b, c



# FINITE ELEMENT MODEL

a, b, c



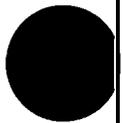
# FINITE ELEMENT MODEL

a, b, c



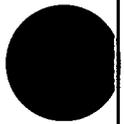
# FINITE ELEMENT MODEL

a, b, c



# FINITE ELEMENT MODEL

a, b, c



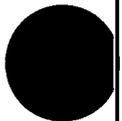
# FINITE ELEMENT MODEL

a, b, c



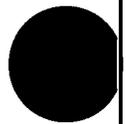
# LOADING AND ANALYSIS

a, b, c



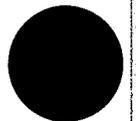
# ANALYSIS

a, b, c



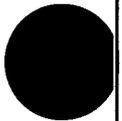
# RESULTS

a, b, c



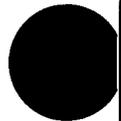
# RESULTS (COMPARISON)

a, b, c



# RESULTS (COMPARISON)

a, b, c



# FAILURE MODE (STATE AT PEAK LOAD)

Westinghouse Non-Proprietary Class B

Large empty rectangular box for drawing or notes.

a, b, c



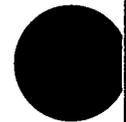
# FAILURE MODE / STATE AT PEAK LOAD

a, b, c



# STATE AT PEAK LOAD

a, b, c



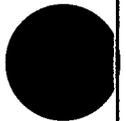
# STATE AT PEAK LOAD

a, b, c



# STATE AT PEAK LOAD

a, b, c



# SUMMARY OF BEHAVIOR AND STATE

a, b, c



# SUMMARY OF BEHAVIOR AND STATE

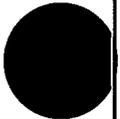
a b c



# SUMMARY OF BENCHMARKING ANALYSIS

[Empty rectangular box for content]

a, b, c



# PREDICTION OF UPCOMING TEST

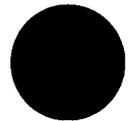


a, b, c



# PREDICTION OF UPCOMING TEST (STATE AT PEAK)

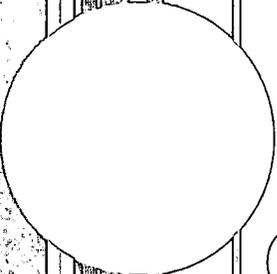
a, b, c



# BENCHMARKING MODELS FOR OUT-OF-PLANE SHEAR

a, b, c





# ANCHORAGE TEST

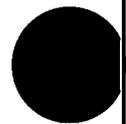


Experimental Results and Benchmarked Models

# Test Setup

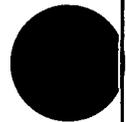


a, b, c



# Specimen Photograph

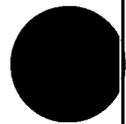
a, b, c



# EXPERIMENTAL RESULTS

Westinghouse Non-Proprietary Class 3

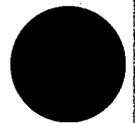
a, b, c



# EXPERIMENTAL RESULTS

Westinghouse Non-Proprietary Class 3

a, b, c



# EXPERIMENTAL RESULTS

Westinghouse Non-Proprietary Class 3

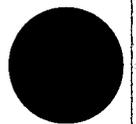
a, b, c



# EXPERIMENTAL RESULTS

Westinghouse Non-Proprietary Class 3

a. b. c.



# EXPERIMENTAL RESULTS

Westinghouse Non-Proprietary Class 3

a, b, c



# EXPERIMENTAL RESULTS

Westinghouse Non-Proprietary Class 3

a, b, c



# EXPERIMENTAL RESULTS

Westinghouse Non-Proprietary Class 3

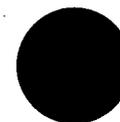
a, b, c



# EXPERIMENTAL RESULTS

Westinghouse Non-Proprietary Class 3

a, b, c



# EXPERIMENTAL RESULTS

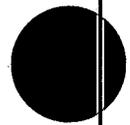
Westinghouse Non-Proprietary Class 3

a, b, c



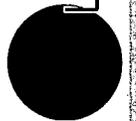
# FINITE ELEMENT MODEL

a, b, c



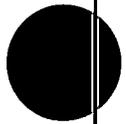
# FINITE ELEMENT MODEL

a, b, c



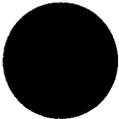
# FINITE ELEMENT MODEL

a, b, c



# DEVELOPMENT OF FINITE ELEMENT MODELS

a, b, c



# DETAILS OF FINITE ELEMENT MODELS



a, b, c



# STATE AT LOAD LEVEL CORRESPONDING TO STEEL YIELDING (1500 KIPS)

a, b, c



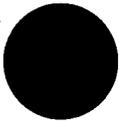
# STATE AT LOAD LEVEL CORRESPONDING TO STEEL YIELDING (1500 KIPS)

a, b, c



# Summary of State at Load = 1500 kips

a, b, c



# PHOTOGRAPH OF SPECIMEN AT 1500 KIPS SHOWING CRACKING

a, b, c

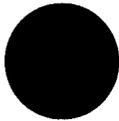


# STATE AT LOAD LEVEL 1800 KIPS

a, b, c



a, o, c



# COMPARISON OF EXPERIMENTAL AND ANALYTICAL RESULTS

a, b, c

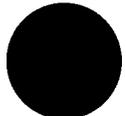


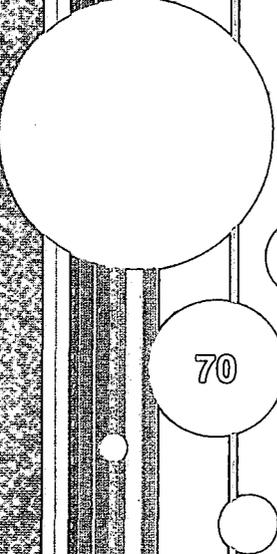
# COMPARISON OF EXPERIMENTAL AND ANALYTICAL RESULTS

a, b, c



# COMPARISON OF EXPERIMENTAL & ANALYTICAL RESULTS a, b, c





# SUMMARY AND RECOMMENDATION

# SUMMARY

a, b, c



# SUMMARY

a, b, c



# RECOMMENDATION

a, b, c

