



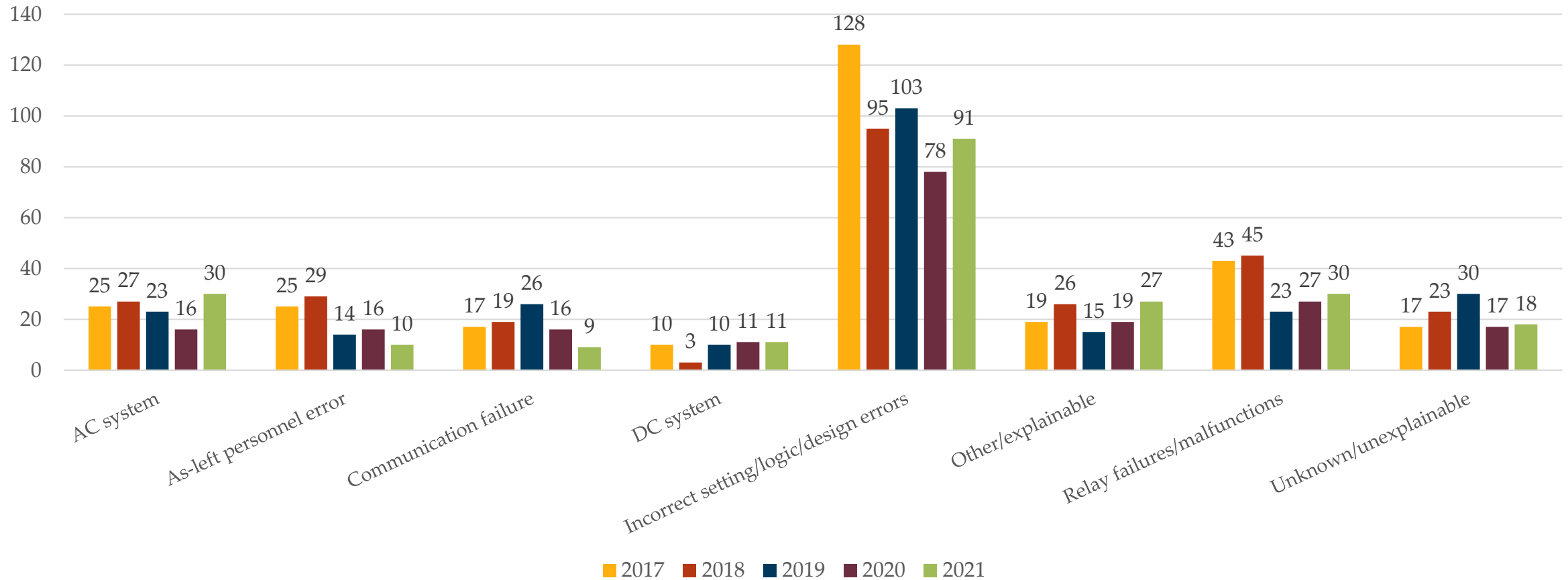
Relay Failure/Malfunction  
Analysis for WI  
2017-2022

December 8, 2022

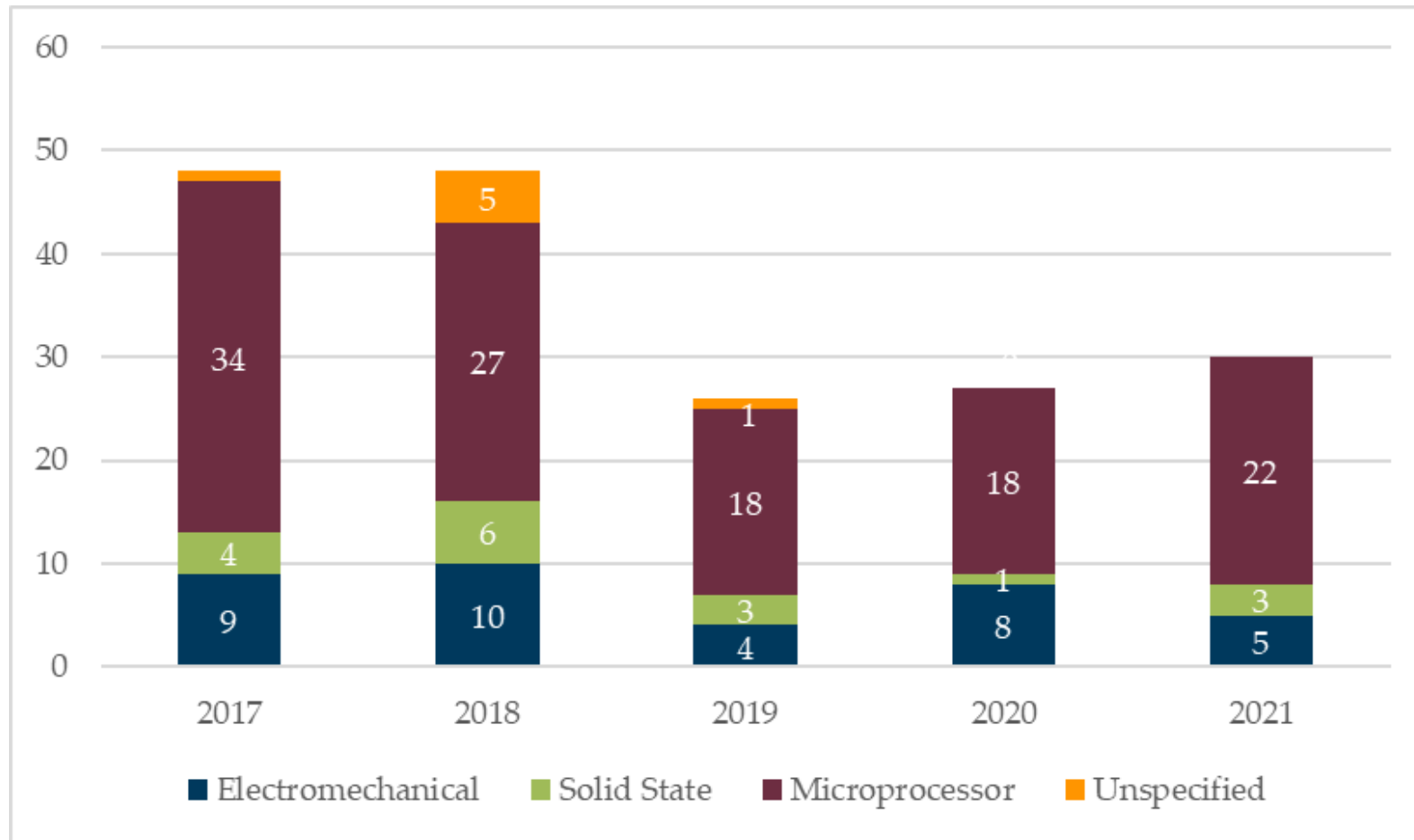
James Hanson  
Senior Engineer

# Misoperation Breakdown by Category

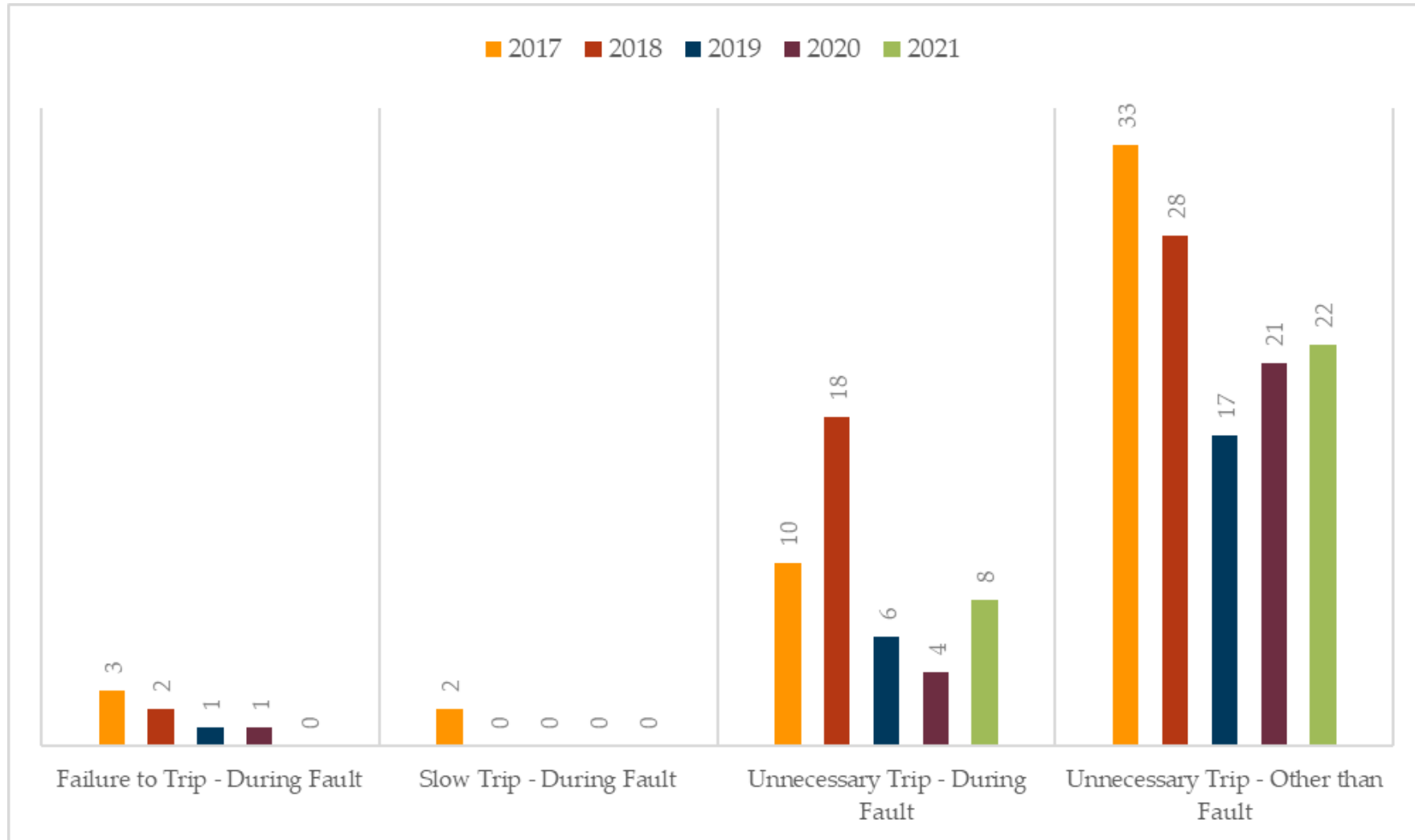
Misoperation by Category



# Relay Failures/Malfunctions by Equipment Type

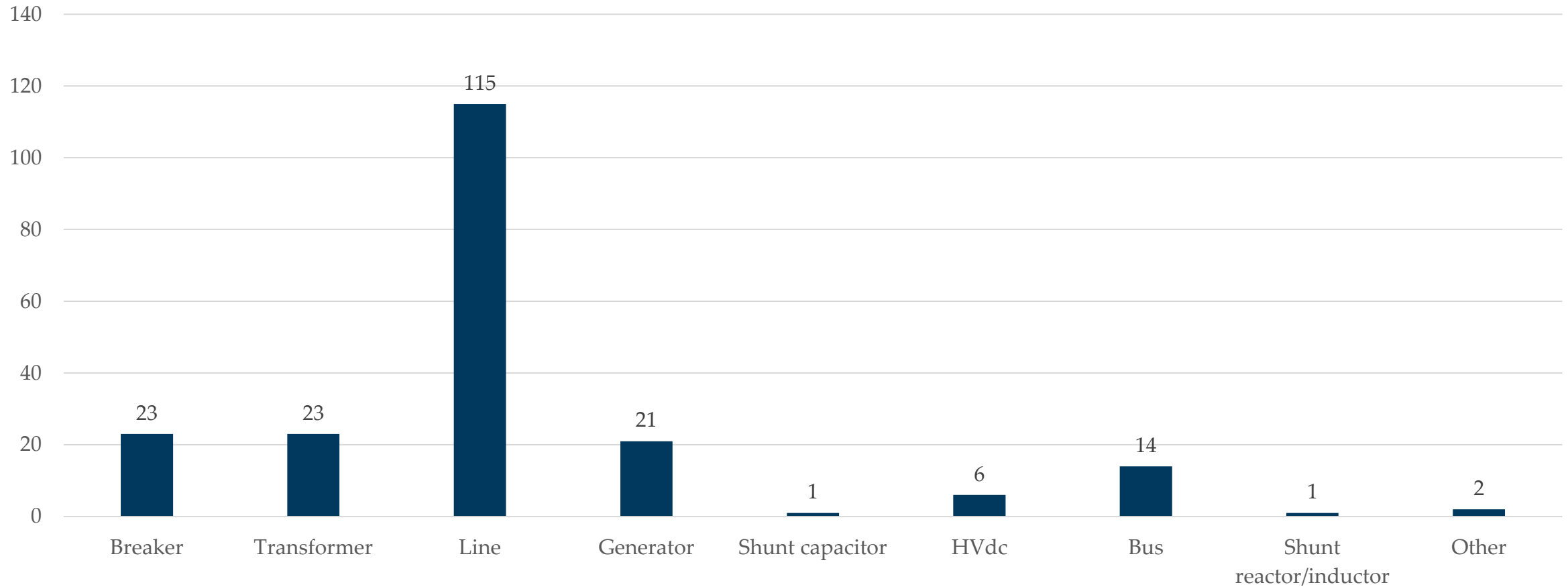


# Relay Failures/Malfunctions by Category



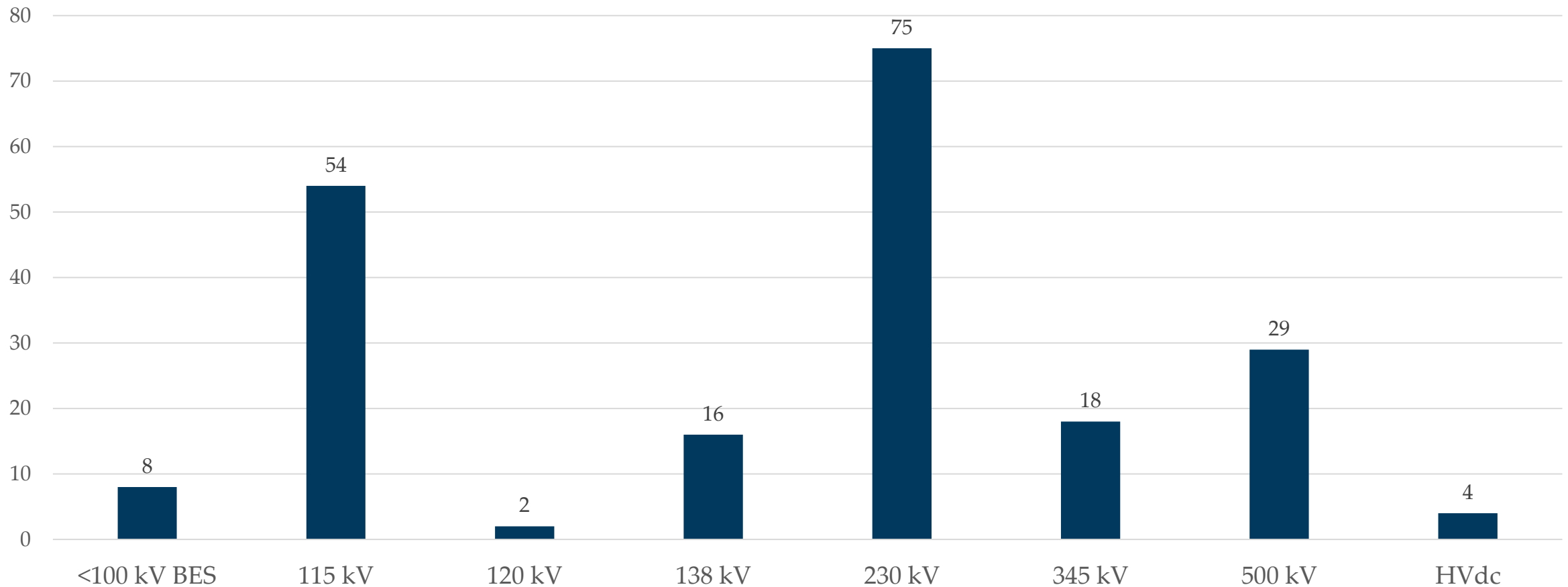
# Relay Failure/Malfunction—Equipment Type

By Equipment Type 2017–2022



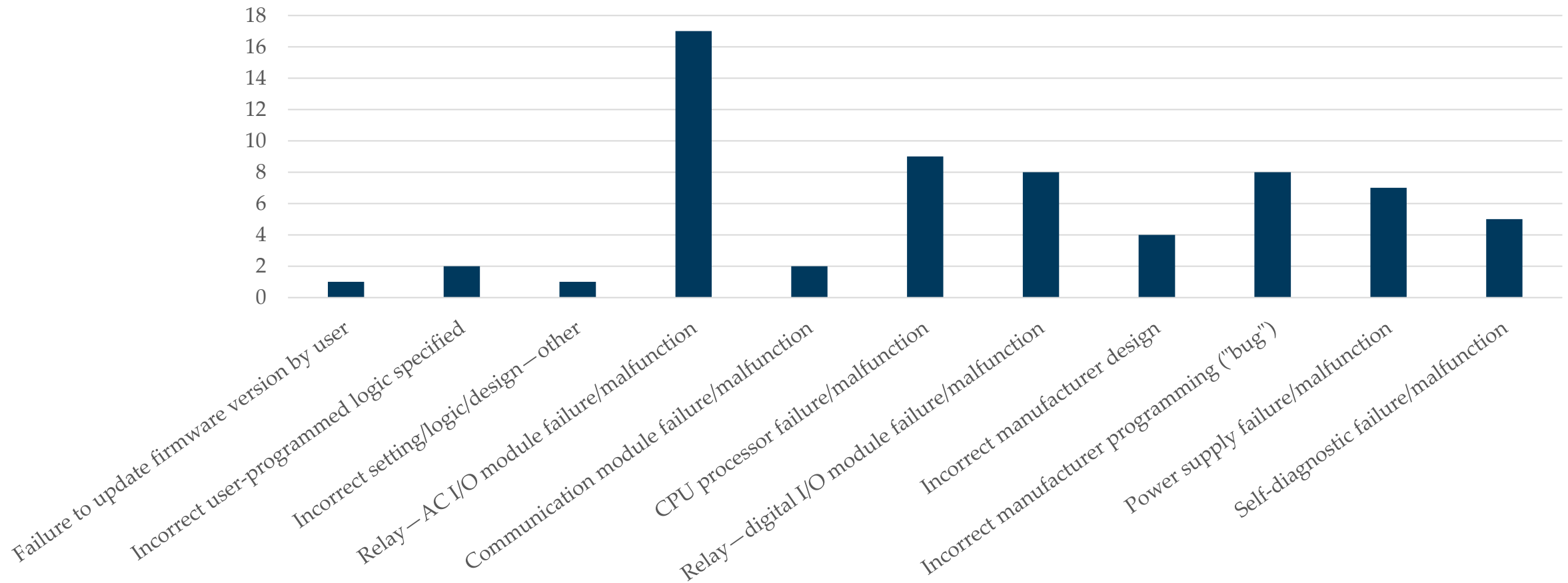
# Relay Failure/Malfunction—Voltage Class

By Voltage Class 2017–2022



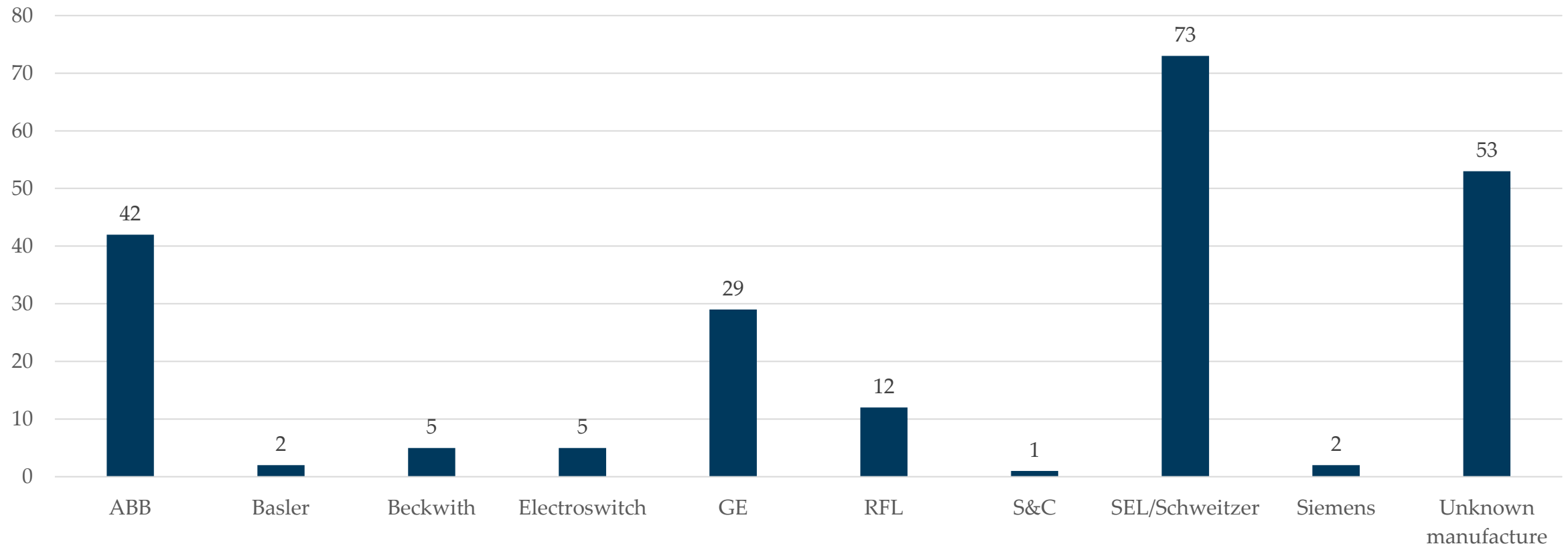
# Relay Failure/Malfunction—Sub-Cause

142 Submissions — Blank/Unknown/Other



# Relay Failure/Malfunction—Relay Manufacture

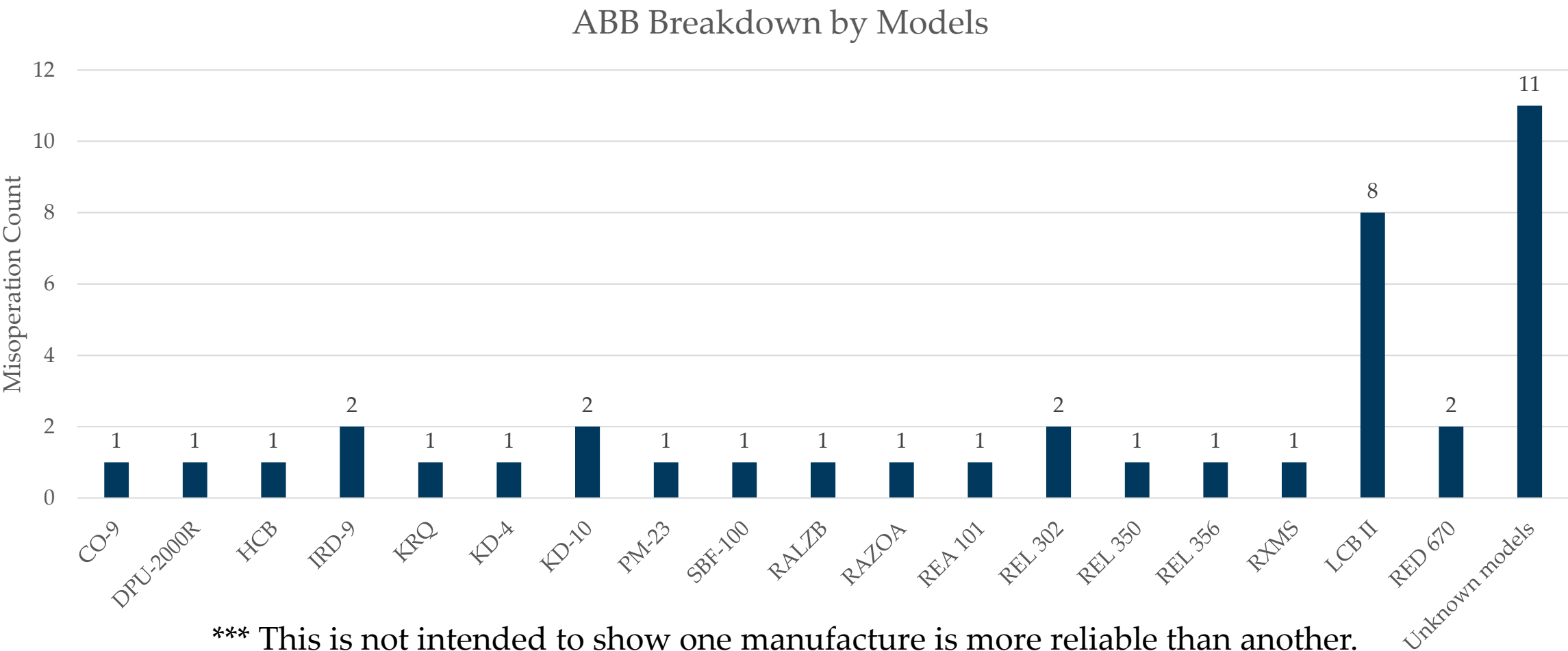
By Relay Manufacture 2017–2022



\*\*\* This is not intended to show one manufacture is more reliable than another.  
This graph shows a simple count and does not reflect number of relays in service

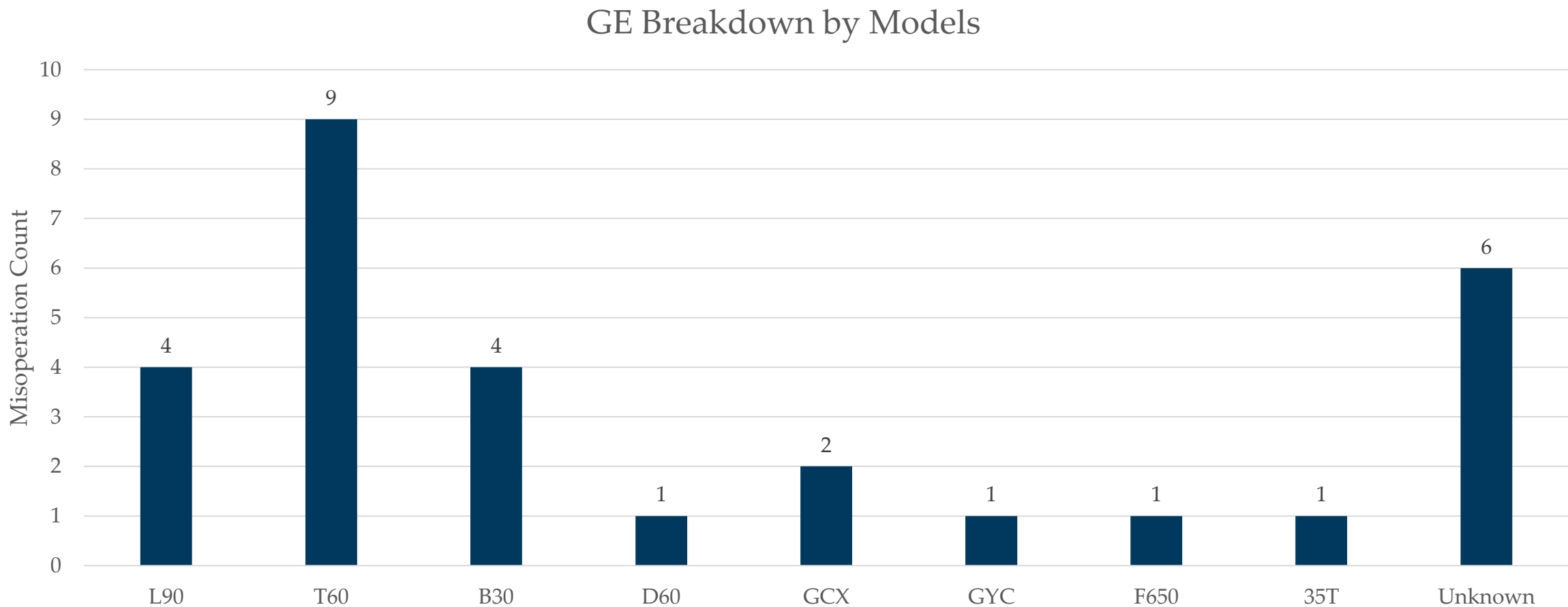


# Relay Failure/Malfunction—ABB Breakdown by Models



\*\*\* This is not intended to show one manufacture is more reliable than another.  
This graph shows a simple count and does not reflect number of relays in service

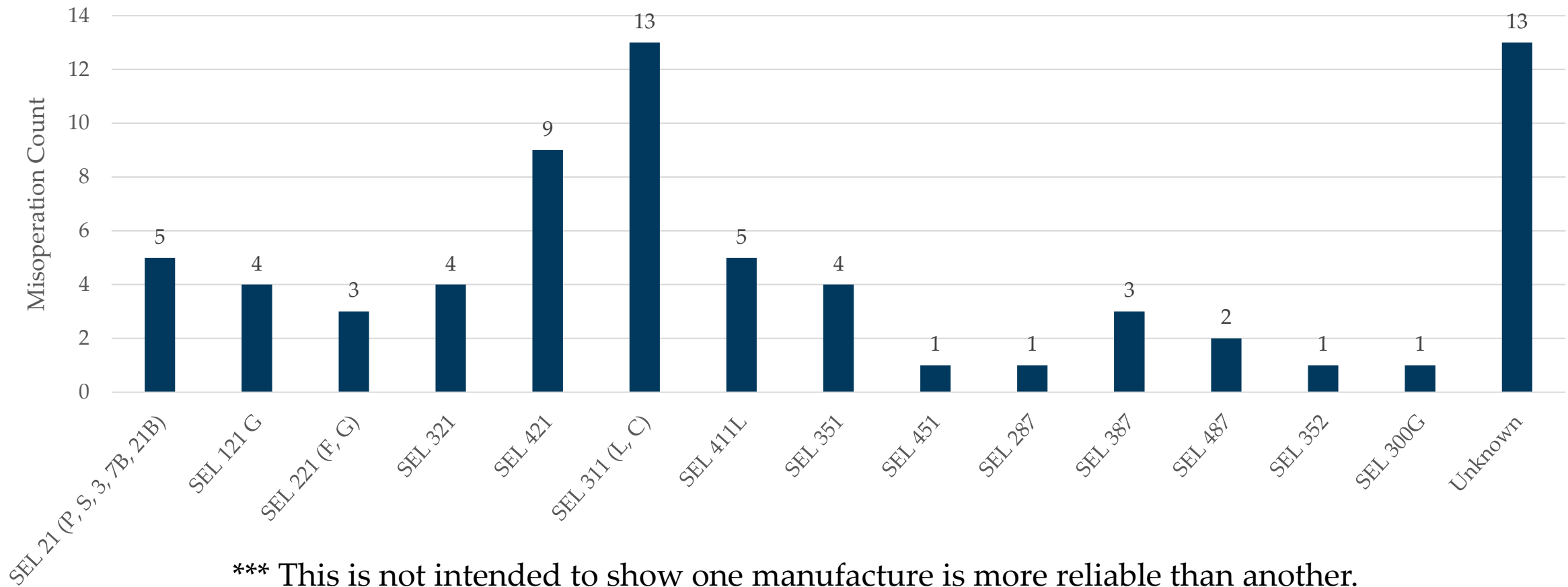
# Relay Failure/Malfunction—GE Breakdown by Models



\*\*\* This is not intended to show one manufacture is more reliable than another.  
This graph shows a simple count and does not reflect number of relays in service

# Relay Failure/Malfunction—SEL Breakdown by Models

SEL Breakdown by Models



\*\*\* This is not intended to show one manufacture is more reliable than another.  
This graph shows a simple count and does not reflect number of relays in service



## Contact:

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