



## UKOPA MAHP Product Loss & Fault Database Update

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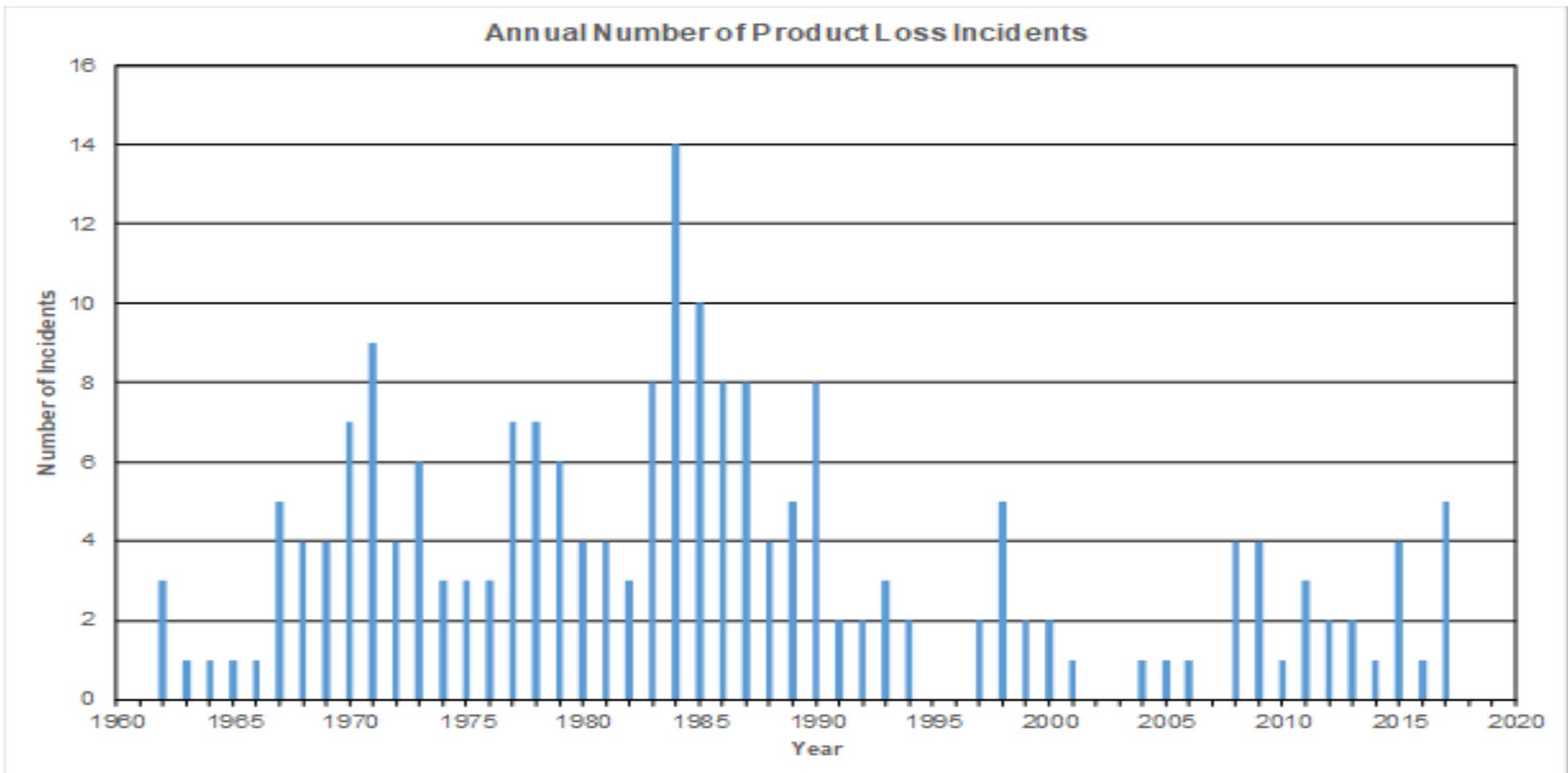
# 2017 Product Loss & Fault Data

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- ❑ 5 product loss incidents
  - ❑ 1 leak due to external corrosion
    - ❑ 60 year old pipe scheduled for repair in 2017
  - ❑ 3 leaks from socket & spigot welds
  - ❑ 1 seep from a crack in a dented seam weld
  
- ❑ 37 faults reported in 2017
  - ❑ Associated with 41 individual defects
    - ❑ 116 faults recorded in 2016
    - ❑ 90 faults recorded in 2015
  
- ❑ UKOPA Pipeline Product Loss Incidents and Faults Report (1962 – 2017)
  - ❑ v0.1 Circulated to FARWG for comment
    - ❑ Comments received from Graeme Pailor & Richard Price
  - ❑ v0.2 Issued to Board for approval yesterday

# Product Loss Incident Data

□ 202 Incidents (1962 – 2017)

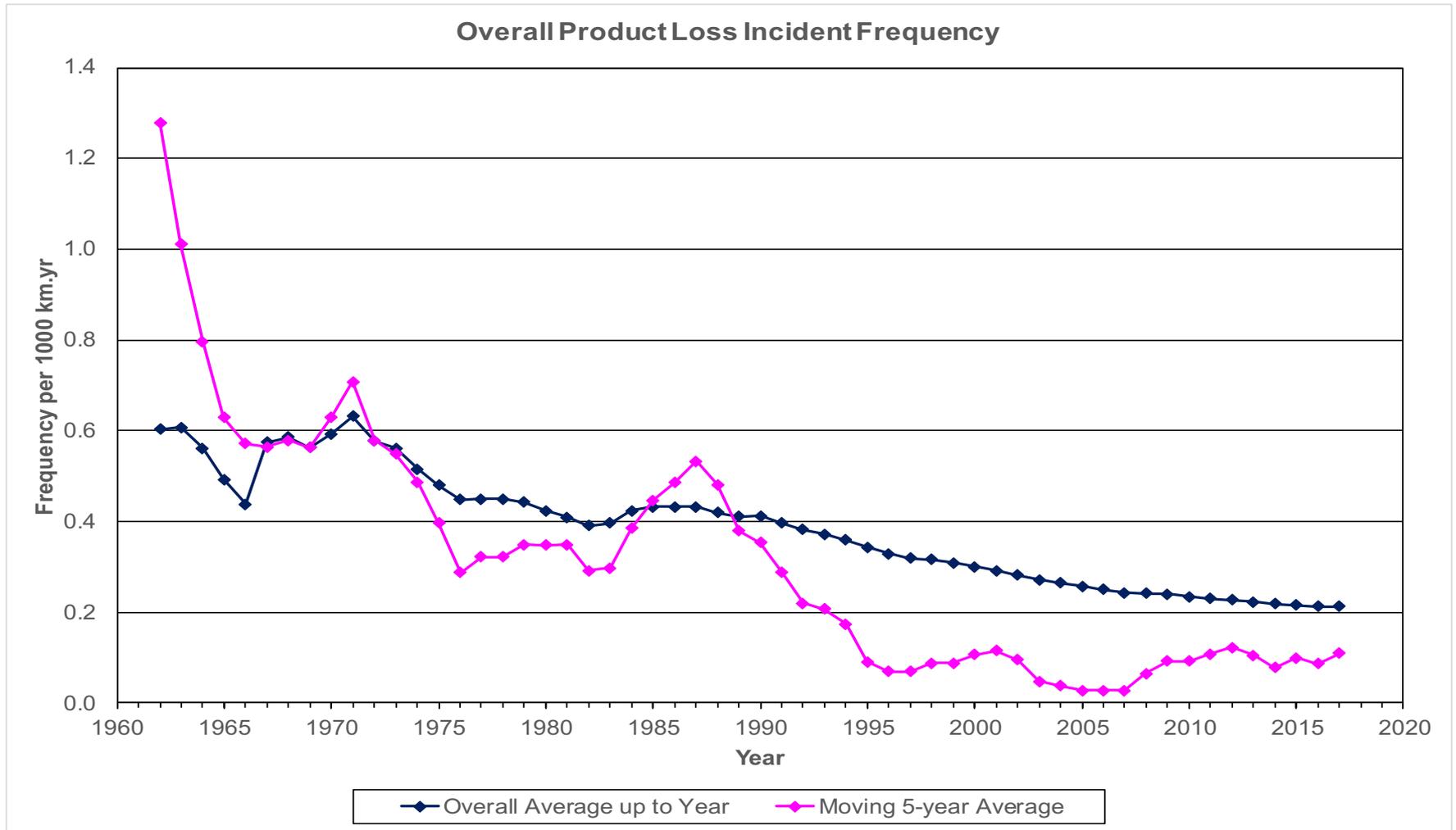


# Product Loss Incident Data

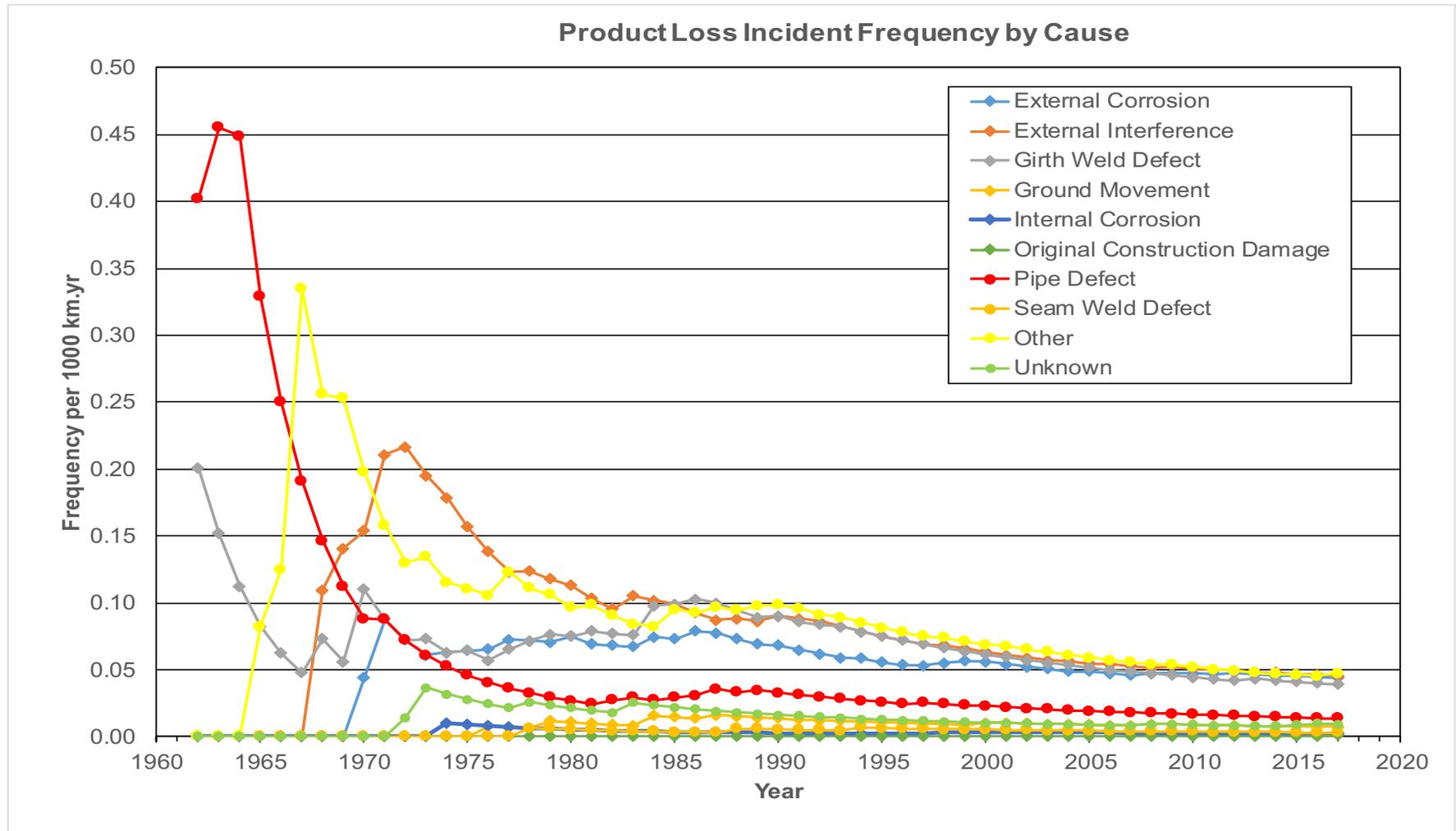
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- ❑ 2017 MAHP Pipeline Population – 23,897 km
  
- ❑ Total Operational exposure – 951,250 km yrs
  
- ❑ Overall leak rate (1962 – 2017) =  $0.212 \times 10^{-3}$  per km yr
- ❑ 20 year leak rate (1998 – 2017) =  $0.088 \times 10^{-3}$  per km yr
- ❑ 5 year leak rate (2013 – 2017) =  $0.110 \times 10^{-3}$  per km yr
  
- ❑ *2017 leak rate* =  $0.209 \times 10^{-3}$  per km yr

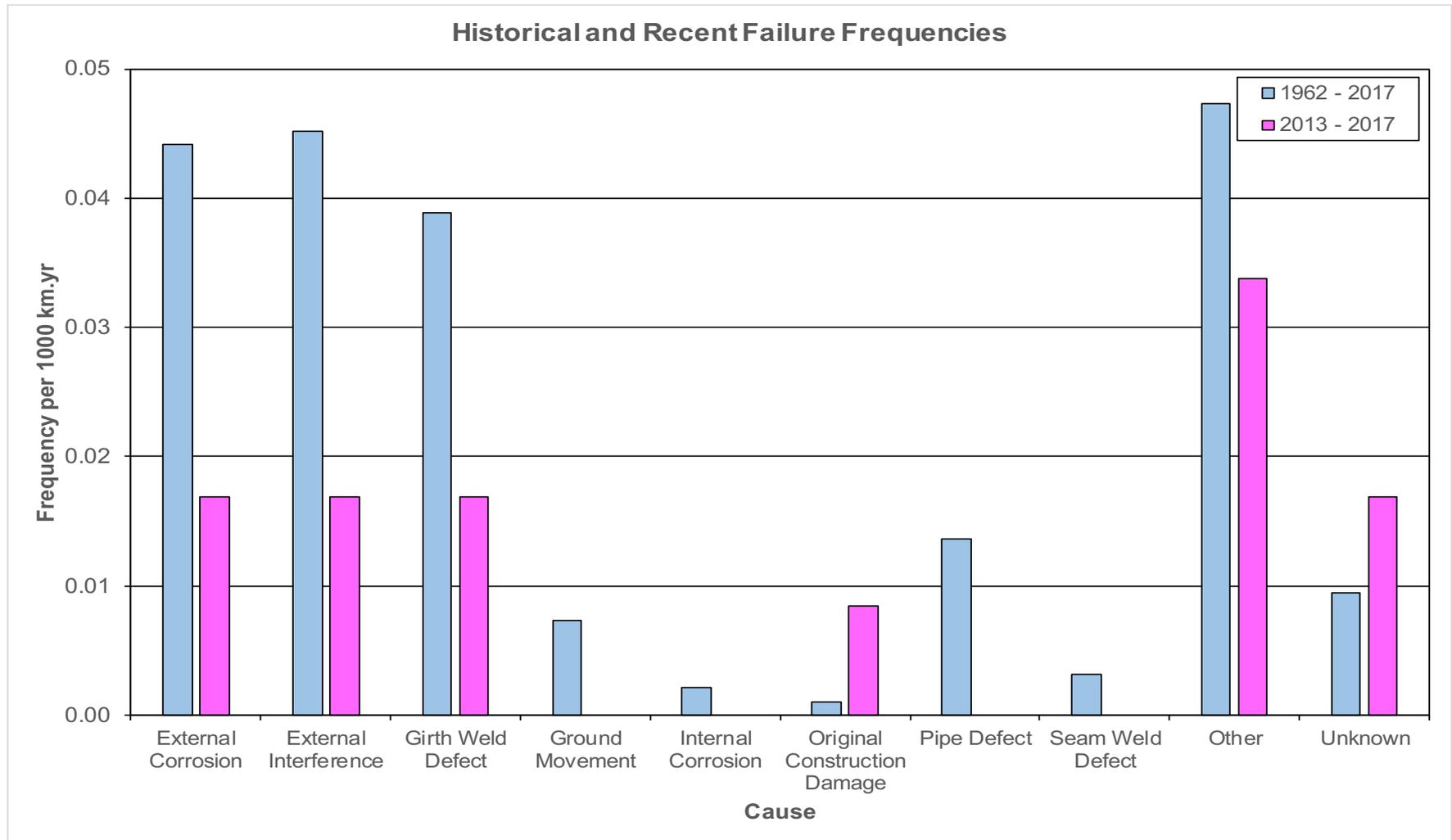
# Overall Product Loss Incident Frequency



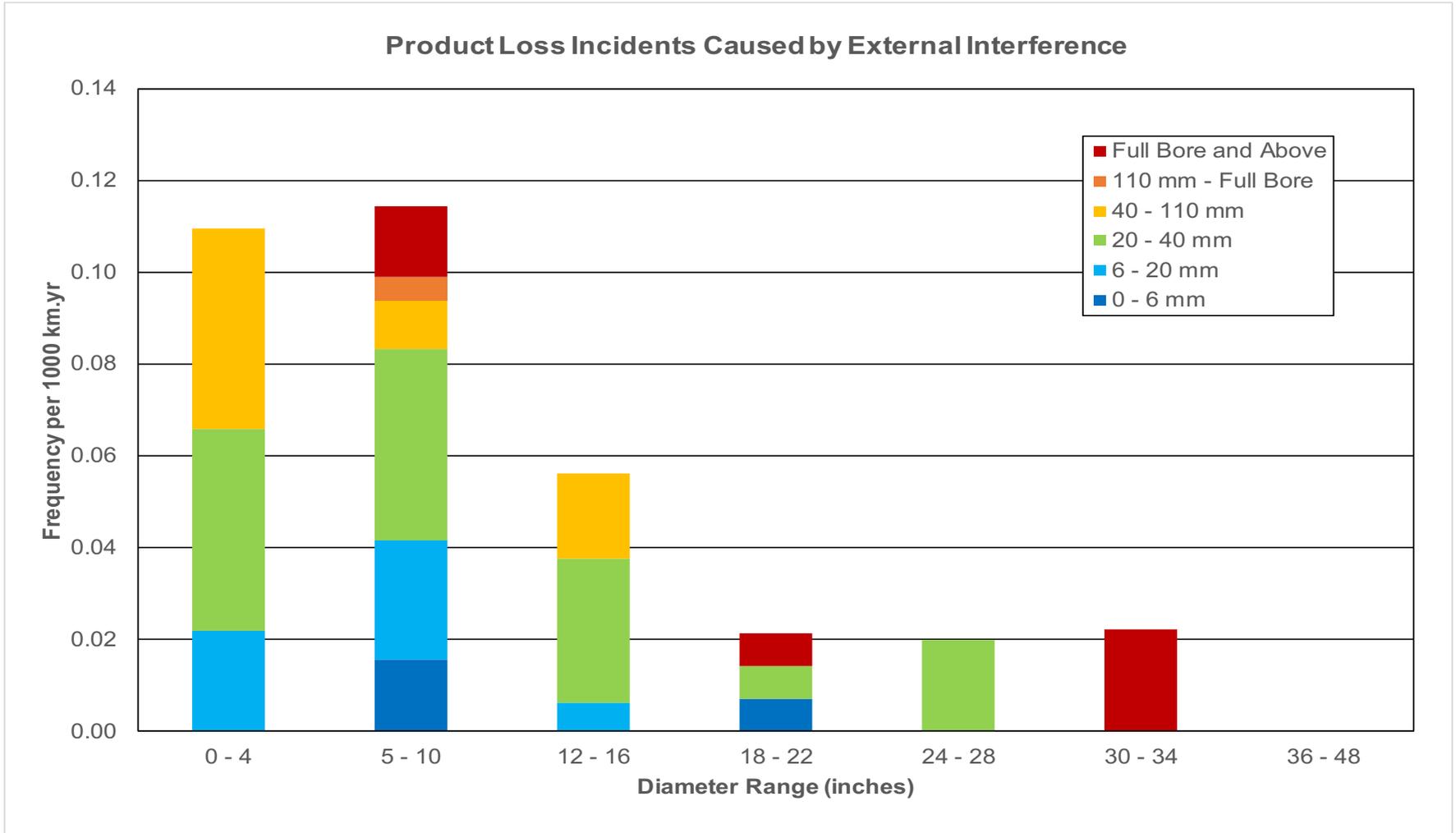
# Product Loss Incident Frequency by Cause



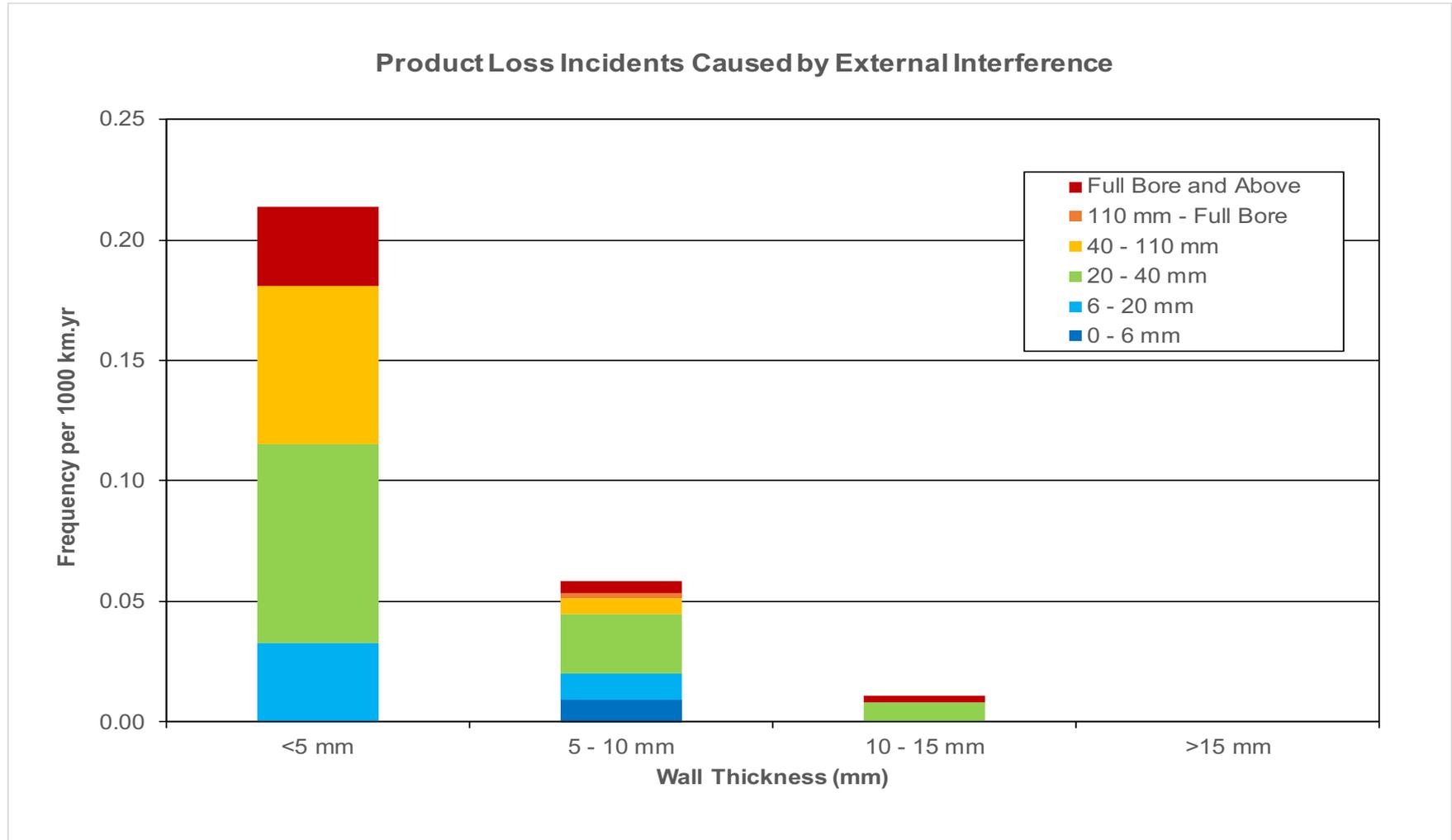
# Historical & Recent Product Loss Incident Frequency by Cause



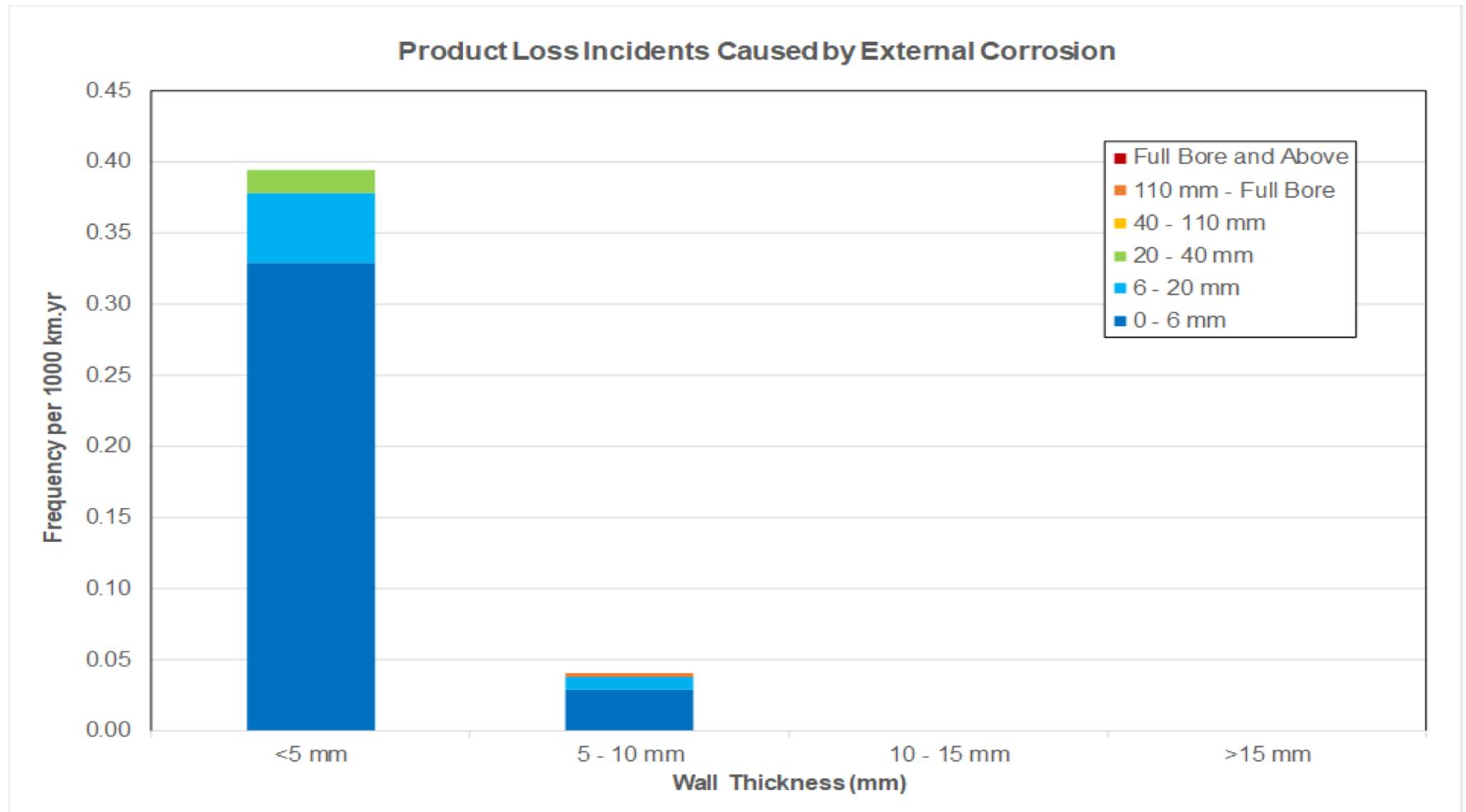
# External Interference Incidents - by diameter range



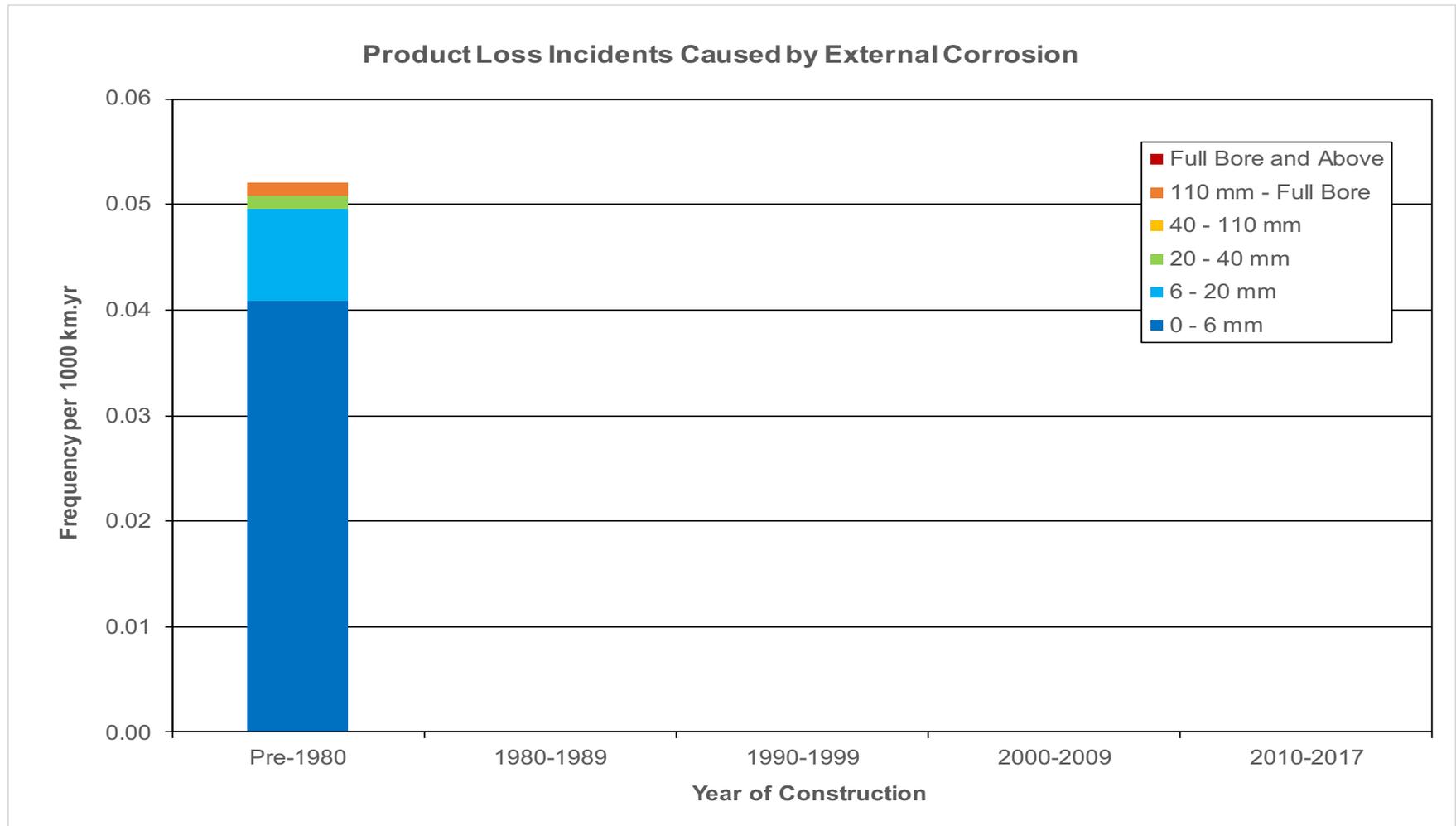
# External Interference Incidents – by wall thickness



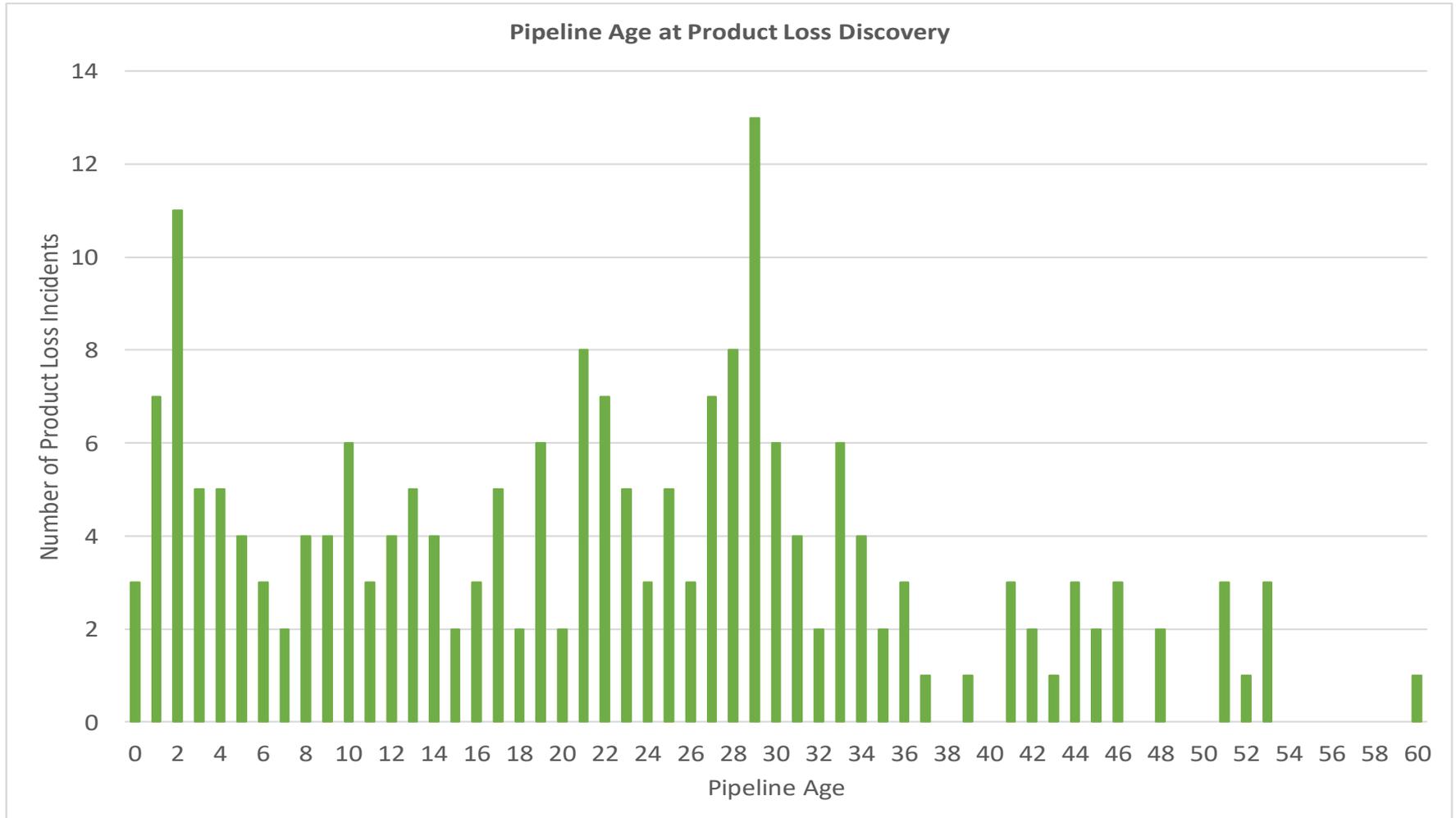
# External Corrosion Incidents - by wall thickness



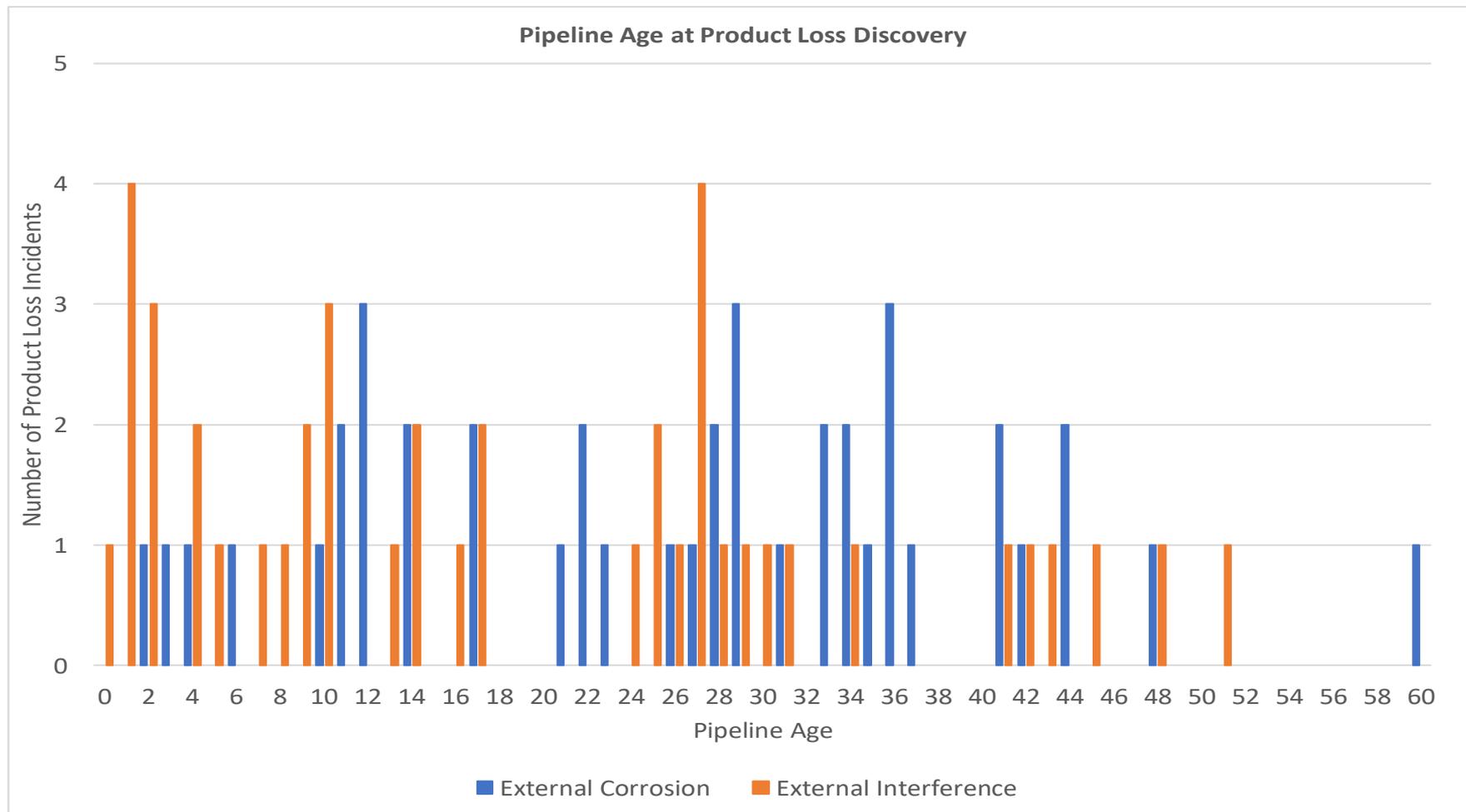
# External Corrosion Incidents - by year of construction



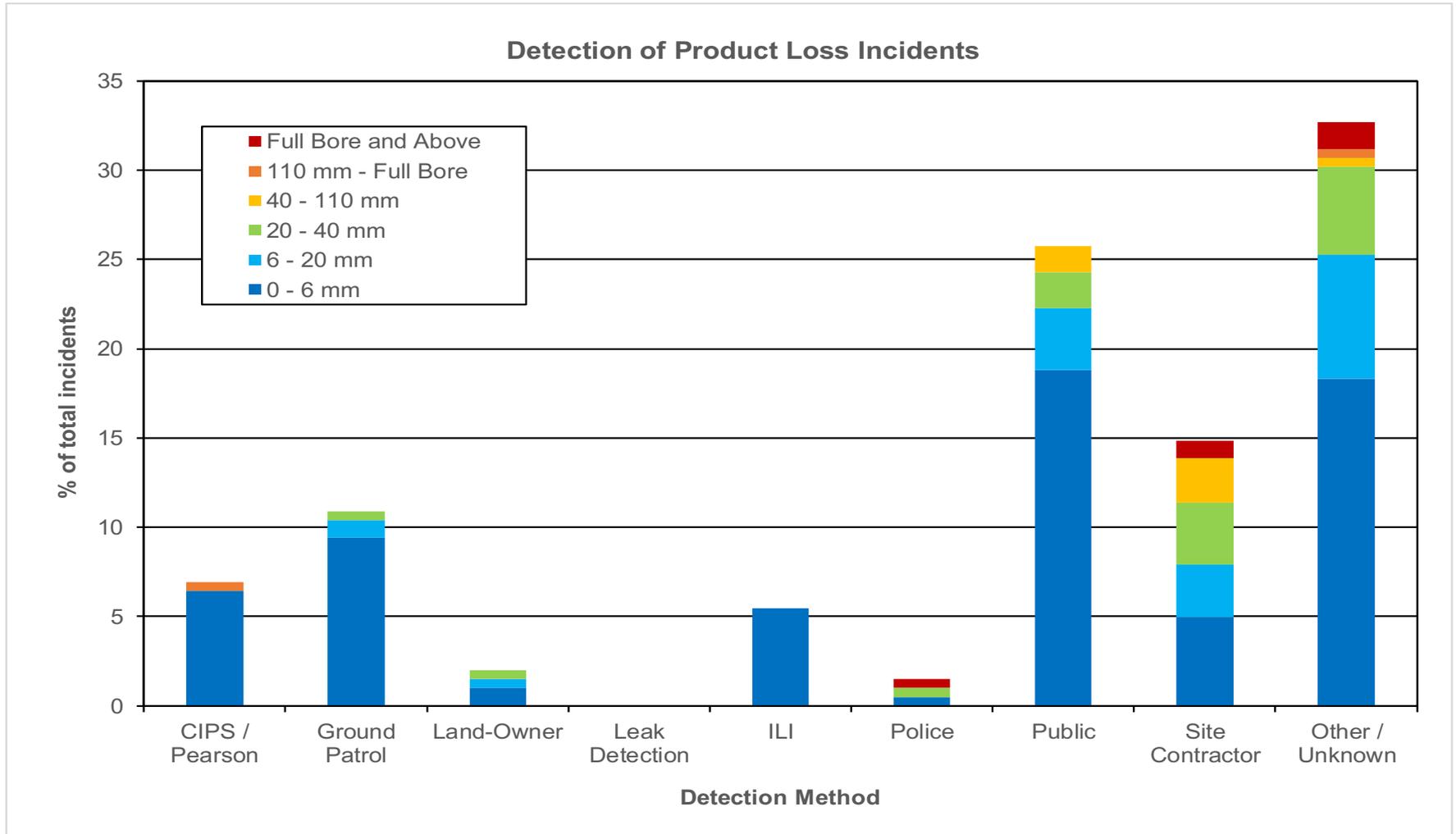
# Pipeline Age when Product Loss Discovered – All Causes



# Pipeline Age when Product Loss Discovered – External Interference vs External Corrosion



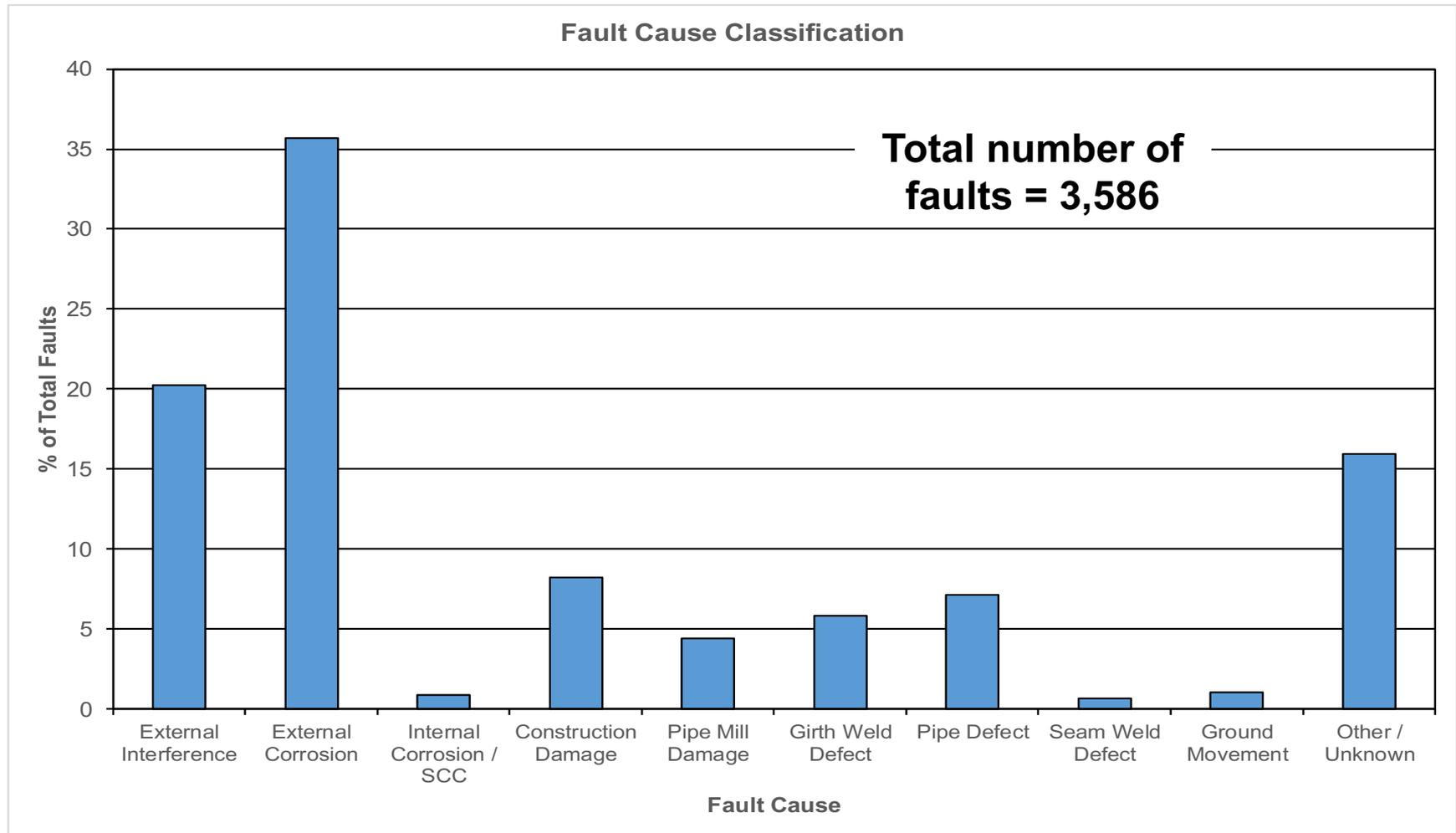
# How Product Loss Incidents are Discovered (1962 – 2017)



# Faults & Product Loss (1962 – 2017)

Cause	Faults	Product Loss
External Corrosion	1280	42
External Interference	725	43
Girth Weld Defect	208	37
Ground Movement	38	7
Internal Corrosion / SCC	32	2
Material Defect (pipe, mill damage, seam weld)	437	16
Original Construction Damage	295	1
Other	380	45
Unknown	191	9
<b>TOTAL</b>	<b>3586</b>	<b>202</b>

# Fault Causes (1962 – 2017)



# MAHP Database 2019 Plan

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- Review data and adjust/correct
  - Leak data
  - 2019 data
  - All fault data
  
- Review FR/1 form & spreadsheets
  - Based on original British Gas / Transco forms
    - Fault data – 40 items
    - Defect data – additional 5 items
    - Leak data – additional 17 items
    - Section C – additional information not required by UKOPA
  
  - 100% supply operator name
  - 5% supply date of last aerial surveillance

# Other database progress

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## Liquid hydrocarbon database

- Launched in 2016
  - Some operators providing data
- Push to gather more data from non-MAHPs
  - Email me if you wish to contribute

## LUP case database

- Recreate log of significant LUP cases
  - Inconsistency from LPAs
  - Risk mitigation doesn't change zone
- Requested by HSE to help understand impact