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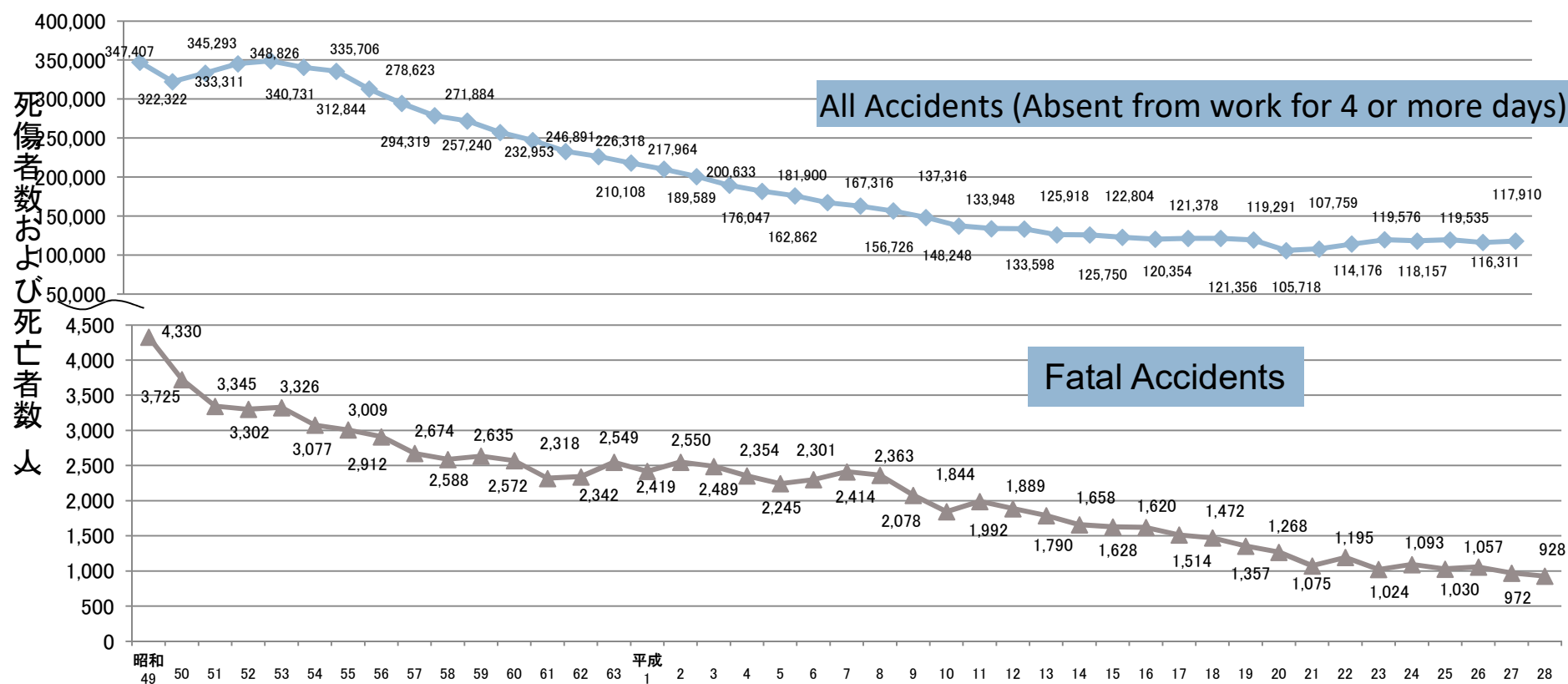
# NEW STRATEGIES TO ENHANCE VOLUNTARY APPROACH FOR OCCUPATIONAL SAFETY AND HEALTH: CASE OF JAPAN



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# Occupational Accidents Statistics



# Enhance Voluntary Activities for OSH

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- Promotion of voluntary OSH activity is a key challenge in the OSH inspection policy.
  - ▣ Compliance of regulations is indispensable but not sufficient for effective prevention of occupational accidents.
  - ▣ Because regulations obliges enterprises the lowest standard of the prevention.
- Need to enhance incentives for voluntary activity

# New Approaches in Three Aspects

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- For enterprises
  - ▣ Enhance incentives for voluntary OSH activities by Public Announcement of Excellent OSH Enterprises.
- For workers
  - ▣ Improve risk sensitivity by Imitative Risk Experience Training.
- For facilities
  - ▣ Enhance flexibility of regulations for machines or facilities which conform “Functional Safety” requirements.

# Public Announcement of “Excellent OSH Enterprises”

Certification  
Mark



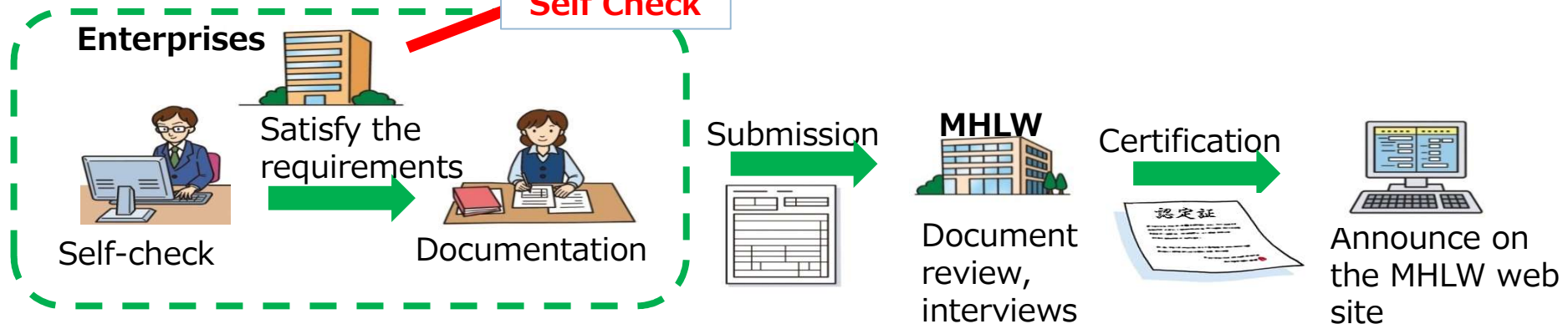
## - Encourage OSH excellent companies -

### □ Merits for certified enterprises

- Broad appeals of OSH excellency
- Appeal on recruit information
- Use certification mark on products, etc.



Web-based  
Self Check



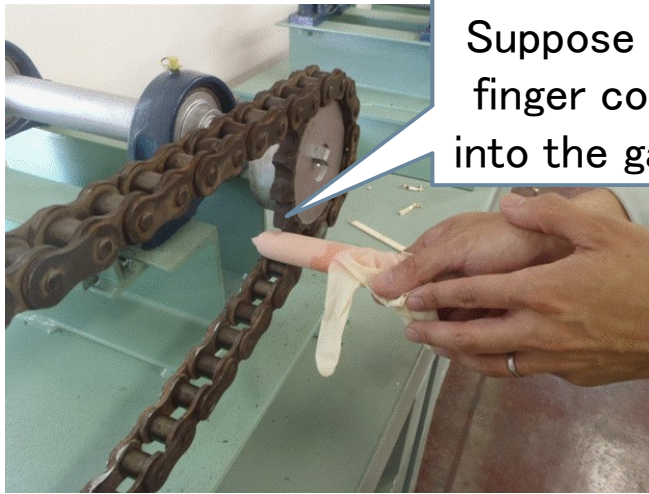
# Evaluation Items for Certification

Required items	Description
1 Compliance of OSH regulations	i.e. No prosecution nor rescission of the certifications in recent three years.
2 Occupational accident statistics	i.e. No serious accidents by violation of regulations in recent three years, Lower accident rate than average in subscriber's industrial sector.
3 Disqualification items	i.e. No incidents which is not suitable for certification in recent three years.
4 OSH management	i.e. OSH department and competent personnel.
5 OSH activities	i.e. OSH policy and goals declared by CEOs.

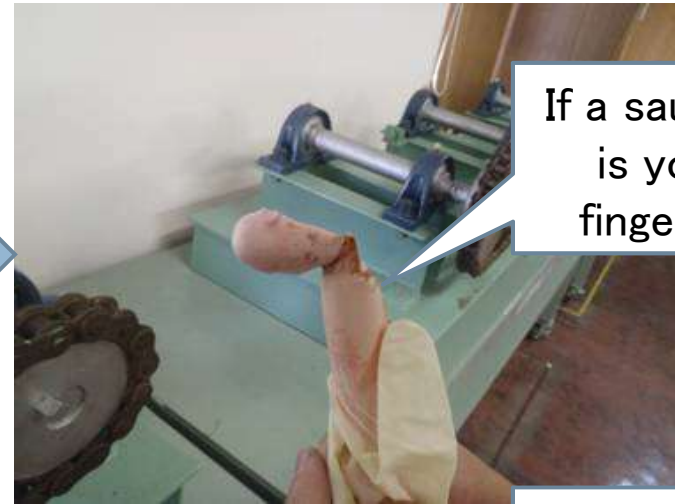
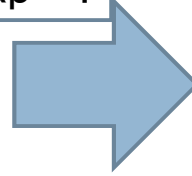
Optional Items	Scheme points	Activity Points	Total
1 OSH promotion activities	5	-	5 (Minimum points: 0)
2-1 Occupational Health activities	10	2	12 (Minimum points: 8)
2-2 Activities for mental health	10	-	10 (Minimum points:6)
2-3 Prevention of long working hours	10	3	13 (Minimum points :8)
2-3 Prevention of passive smoking	-	2	2 (Minimum points :0)
3 Risk reduction in working environment	10	3	13 (Minimum points 8)

# Imitative Risk Experience Training (IRET)

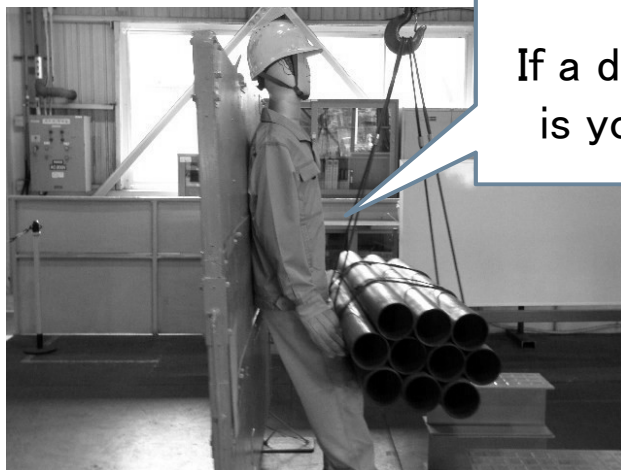
- **Necessity to Improve risk sensitivity of workers**
  - ▣ Insensitivity of risks, induced by reduction of occupational accidents rate.
  - ▣ Hazards becomes **unrecognizable**, because of safety measures of machines and facilities
  - ▣ Risk insensitivity tends to induce **ignorance of safety requirements**
- **Imitative Risk Experience Training**
  - ▣ Intends to improve risk sensitivity by **experiencing imitative disasters** such as:
    - Pinched hand, getting caught in rollers, fall, falling objects, electrification, gas explosion.



Suppose your  
finger comes  
into the gap....



If a sausage  
is your  
finger....



If a dummy  
is you....



If you fall  
4meters....



# Issues Required Special Attention for IRET

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## □ Risk Compensation

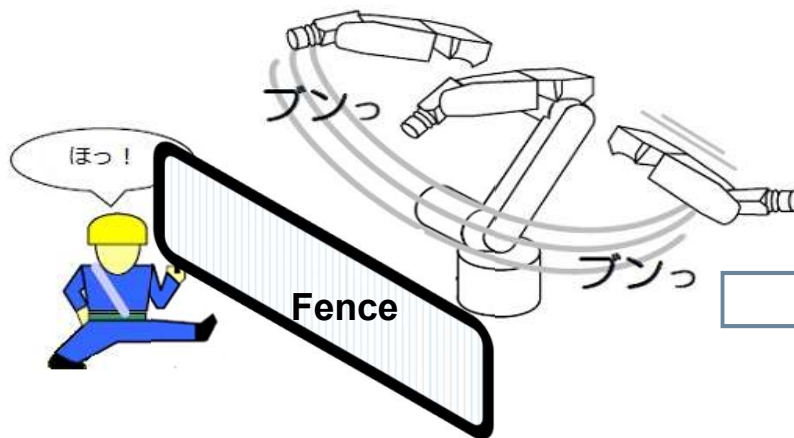
- ▣ Canceling merits of safety training by higher risk taking behavior than before.
  - Improved self reliability by receiving special practical training.
  - It promotes risk taking behavior than before.

## □ Issues to Require Special Attention

- ▣ Avoid excessive fear and anxiety.
- ▣ Promote image training for recognizing real risk events associated with actual situation, based on imitative risk experience.
- ▣ Encourage to recognize necessary evasive actions and measures to prevent accidents.

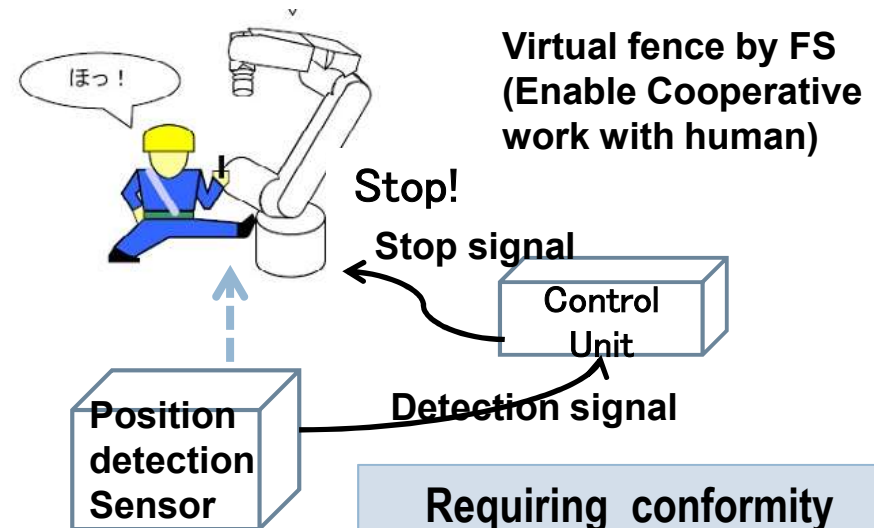
# Enhancing Flexibility of Safety Regulations by Introduction of Functional Safety

**Current Regulations**  
(Physical protection and inspections by competent persons)



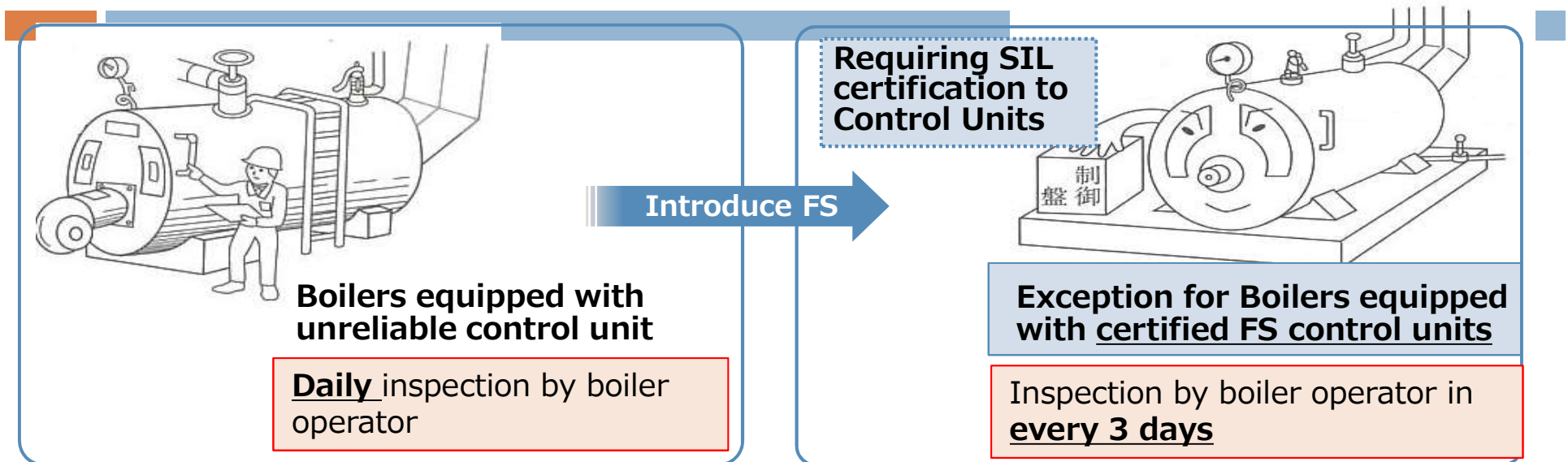
**Enclose Industrial Robots**  
(No cooperative work with human)

**New regulations based on FS**  
(Safety measures accomplished by safety related systems)



**Requiring conformity assessments of SIL or PL**

# Application of FS to boiler regulations



## Conformity Assessment by Certification Body

- Conformity assessments by specialized certification body is necessary.
- For users, it is difficult to assess conformity of design and production of control units to functional safety standards.

# Requirements in FS Guidelines

(Compatible to IEC 61508 and ISO 13849 )

Identify Required  
Safety Function



Determine Required  
Safety Integrity Level  
(SIL or PL)



Identify Design  
Requirements &  
Manufacture Products

- Conduct risk assessments of products and identify hazards and risks.
- Identify required safety function of safety related systems to reduce the risks sufficiently.

- Determine required safety integrity level (SIL or PL) for safety related systems which implement safety function.

\*Required safety integrity level: Probability of failure of safety function on demand. Expressed by **probability of dangerous failure of safety related systems on demand (PFD)**.

- Determine **design requirements** for safety related systems to satisfy required SIL or PL.
- Manufacture products following the design requirements.

# What I said...

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