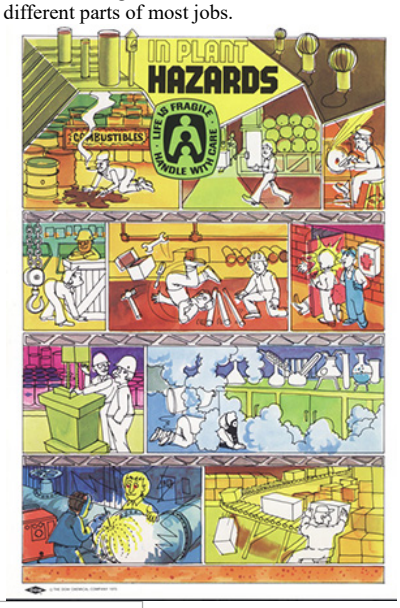
Health, safety, and environment (HSE) hurt based safety approach

Developing a corporate safety attitude to reduce and hopefully eliminate injuries, accidents and releases of toxic chemicals has been practiced for many years. In the 1970's the Dow Chemical Co. practiced the “Life is Fragile-Handle with Care” (http://www.chemheritage.org/discover/media/magazine/articles/29-1-delicate-matters.aspx) program at its laboratories and production plants.[1] The activities and technologies described below are interconnected with other safety approaches; however it is useful to consider them separately since they are primarily associated with different parts of most jobs.



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Contents

Benefits of the hurt based safety approach

- Natural safety language of humans that will protect families and prevent injuries.
- Consistent description of actual injury severity.
- Integral assessment of potential injury severity.
- Resonates with workforce to enable cultural changes based on caring for people.
- Alignment with the Corporation’s safety vision of “Nobody Gets Hurt.

Hurt based approach

The hurt based approach to safety is a methodology for assessing safety incidents with high consequence potential. This approach helps to determine the depth of investigation requirements (in addition to actual severity). The hurt based approach is used to identify the integral potential and consistent actual severity of an incident and also used as a safety culture enabler. It helps to look significantly into incidents and possible ways to avert the reoccurrence. Figure 1 below gives an overview of how to apply hurt based on incidents.[2]

This approach is designed to educate the employee and family in most programs to eliminate the causes of accidents and/or incidents. The “Nobody Gets Hurt” process has an additional layer to highlight the multiple fatality incidents that affect many people for very long times and also can greatly affect the health of a whole corporation.

The Hurt based approach (Fig. 1) mitigates the limitations of the treatment based approach (/Health,_safety,_and_environment_(HSE)_treatment_based_safety_approach).

Severity Levels	Duration	Examples

4 and 5 Fatality(ies)	—	• 5—Multiple fatalities • 4—Single fatality
3 Severe Hurt	Long-term, Life-altering	• Amputation/severe disfigurement • Total loss of organ/vision/hearing
2 Moderate Hurt	Week to Months	• Bone fractures, significant lacerations • Moderate hearing/vision loss
1 Minor Hurt	Hours to Days	• Minor cuts/bruises/sprains/strains • Mild hearing loss/corneal abrasions
0 No Hurt	No Body Damage	• Object in eye removed by flushing • Slips, trips, or falls with no bruising or swelling • General soreness

Hurt Based Safety Approach

(/File:HURT_Based_Safety_Levels_-_SPE.PNG)

Levels explained

Level 0 - No hurt

Actual Hurt
No Hurt occurred (no physical damage) but there are actionable learnings to take to possibly prevent future Hurt.
Potential Hurt level
No Hurt occurred (no physical body damage) but there are actionable learnings to take to possibly prevent future Hurt and a higher potential Hurt level is not reasonable.

Level 1 - Minor hurt

Actual level
Injuries or illnesses causing minor physical body damage reasonably expected to heal without any life-altering complication in a short time period (hours to days) such as -

- Minor laceration and/or penetrations that bleed freely.
- Minor chipping or cracking of a tooth and/or teeth.
- Minor second degree burns or blistering.
- Skin rashes and or burn exposure to chemicals an or non-aqueous fluids.
    - Sprains and strains.
    - Minor infections post-injury or from illness.
    - Bruises
    - Partial and self-resolving dislocations.
    - Confirmed slight to mild hearing loss.
    - Mild eye (corneal) abrasions.
    - Confirmed ergonomic or cases requiring minor treatment.

Potential level
A safety event that could reasonably have resulted in an actual hurt level 1 - Minor hurt and a higher potential hurt level is not reasonable.

Level 2 - Moderate hurt

Actual level
Injuries or illnesses causing significant physical body damage reasonably expected to heal without significant life-altering complications in a moderate time period (week(s) to months) such as -

- Fractures, loss of tooth and/or teeth.
- Significant lacerations and/or penetrations.
- Partial and/or single digit amputations.
- Significant second degree burns or blistering.
    - Minor third degree burns.
    - Significant sprains and strains.
    - Major infections post-injury or from illness.
    - Dislocations
    - Punctured ear drum or moderate to moderately severe hearing loss.
    - Moderate visual impairment.
    - Confirmed ergonomic and cases requiring significant treatment, surgery, or physical therapy.

Potential level
A safety event that could reasonably have resulted in an actual hurt level 2 - moderate hurt and a higher potential hurt level is not reasonable.

Level 3 - Severe hurt

Actual level
Injuries or illnesses causing severe physical body damage with probable long-term and/or significant life-altering complications such as -

- Life-altering fractures, lacerations, or penetrations.
- Amputations
- Significant third degree burns.
- Disfigurement
    - Loss and/or impairment of body organ function.

- Severe to complete loss of hearing.
- Severe visual impairment to total blindness.
- Confirmed debilitating ergonomic or serious illness event cases.

Potential level
A safety event that could reasonably have resulted in an actual hurt level 3 - severe hurt and a higher potential hurt level is not reasonable.

Level 4 - Fatality

Actual level
Fatality
Potential level
Fatality or safety event that could reasonably have resulted in an actual hurt level 4 - fatality and a higher potential hurt level is not reasonable.

Level 5 - Multiple fatalities

Actual level
Multiple fatalities
Potential level
Multiple fatalities or a safety event that could reasonably have resulted in an actual hurt level 5 - multiple fatalities but did not.

The factors that influence the assessment of PHL

- Actual event
- Actual hazards (at time of event)
- Pre-event mitigations in place (at time of event)
- Feasible-but-reasonable scenario; highest risk to people
- Utilize Hurt-based severity levels to assign PHL

Reporting

Determine actual hurt level (AHL)

Assess physical body damage (Hurt), use severity chart

Determine potential hurt level (PHL)

Given actual event, determine any feasible-but-reasonable scenarios, determine if any proactive pre-incident mitigation would reasonably have prevented any of the scenarios, decide on highest realistic scenario, use severity chart.

Determine treatment-based incident classification

Given actual level of medical treatment and licensed health care provider instructions use Injury, illness and hazard loss guidelines to determine classification.

Record data

Enter incident data into reporting system and report upward per local protocol

Drivers for change to a hurt based approach

- Need an approach that supports and drives a safety culture of “Caring about People” and “Making it Personal”
- Need to provide a consistent assessment of actual injury severity
- Need to provide potential injury severity to allow proper focus on incidents that resulted in little to no Hurt but could have been much worse

Hurt based principles

- Management led
- Promote an actively caring environment
- Avoid complacency
- Clear expectations
- Simple and concise

Hurt based program objectives

Prevent incidents by
Using systematic processes that identify, control, and mitigate hazards and unsafe conditions.
Providing personnel with skills and knowledge to recognize and eliminate potential hazards, at-risk behaviors and unsafe conditions.
Support continuous improvement by sharing learnings across the organization.

References

1. ↑ Staiti, Alana. N.d. Delicate Matters: “Life is Fragile-Handle with Care”. Chemical Heritage Foundation. Distillations. http://www.chemheritage.org/discover/media/magazine/articles/29-1-delicate-matters.aspx (http://www.chemheritage.org/discover/media/magazine/articles/29-1-delicate-matters.aspx)
2. ↑ Etaje, D., Abdulkarim, M., & Ibe, J. 2013. The Efficiency of Hurt Based Approach in Improving Personnel Safety. Society of Petroleum Engineers. http://dx.doi.org/10.2118/167509-MS (http://dx.doi.org/10.2118/167509-MS).

Noteworthy paper in OnePetro

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Rebbitt, D. 2014. Pyramid Power: A New View of the Great Safety Pyramid. American Society of Safety Engineers. https://www.onepetro.org/journal-paper/ASSE-14-09-30 (https://www.onepetro.org/journal-paper/ASSE-14-09-30).

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See also

HSE (http://petrowiki.org/Health,_safety,_and_environment_(HSE))

Health, safety, and environment (HSE) risk based standards (/Health,_safety,_and_environment_(HSE)_risk-based_standards)

Health, safety, and environment (HSE) treatment based standards (http://petrowiki.org/Health,_safety,_and_environment_(HSE)_treatment_based_safety_approach)

External links

Freibott, Bernd. 2012. Sustainable Safety Management: Incident Management as a Cornerstone for a Successful Safety Culture. American Society of Safety Engineers (ASSE). http://www.asse.org/assets/1/7/BerndFreibottArticle.pdf (http://www.asse.org/assets/1/7/BerndFreibottArticle.pdf)

Wilson, Adam. 2013. Company's Revised Approach To Safety Strives To Make Standards More Natural. Journal of Petroleum Technology. http://www.mydigitalpublication.com/publication/?i=167829&p=124 (http://www.mydigitalpublication.com/publication/?i=167829&p=124)

Category

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