

## Standards & Codes

### Standardization— The Part-Time Less-Understood Activity

BRIG A. S. BHULLAR  
Directorate of Standardization  
Ministry of Defence  
New Delhi

*Standardization is an important discipline for any industrialized nation, more so for a developing country. The management of this activity rests between standards engineers and the experts in different fields who contribute to standardization through their part-time participation in their fields of specialization. The author discusses in this paper pitfalls, frustrations and hurdles faced by standards engineers in the management of standardization activity and suggests ways and means to overcome them—Ed.*

Ask anyone from almost any professional field and he will have something to say about standardization. If such a person had the chance to sit on one of the panels, working groups or committees dealing with standardization of some specific item, procedure or process, he will consider himself an expert on the subject. He is only partially correct and therein lies the core of misunderstanding this activity. He is definitely an expert in the specific technical area and even his contribution to making a document may be enormous, perhaps indispensable. But that in no way makes him an expert on the discipline of standardization as a whole or, for that matter, the business of managing the standardization activity. This is a different cup of tea altogether. This paper examines how the activity of standardization is managed by those involved in it and brings out the various pitfalls, frustrations, special provisions and qualities incidental to its practice.

#### The paper flood

One thing a standards engineer has to get used to is the paper flood. First, there are minutes of the various meetings and draft documents. Then come comments on the draft documents and the minutes. All these have to be circulated. As a result, the draft itself goes through a

couple of changes in which case each draft is to be circulated again. Thus there is a virtual paper flood and you are drowned. There is, however, no short-cut method. Taking a rapid reading course is one way out. If you do not take to this course, you automatically become a rapid reader out of sheer necessity and pressure of the various deadlines. Delegation of



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work, institution of check points, fixing of firm responsibilities, proper filing and indexing, introduction of word processors and proper office management are some of the solutions to the problem. A good standards engineer soon devises a system of what he should personally check and what could be passed on to his subordinates. There is, of course, the ultimate remedy of issuing an amendment after a document has been finalized. Here too a good standards engineer does not stand on false prestige of not wanting to issue an amendment because it highlights his earlier slip up. An amendment should be issued, if warranted, even if it shows him up in a bad light. Lastly, a standards engineer is expected to strike a balance between delaying a document and making it perfect, or issuing a slightly below par document which is badly needed at the time. Achieving this balance is a matter of experience and judgement. Some of the standards engineers, say at the national level, are generally not subjected to any pressure for early issue of a standard document. Others at the company or departmental level undergo this pressure as an integral part of their professional duties.

### Predominance of nil reports

Next we come to the predominance of nil reports from those among whom the documents are circulated. 'I have no comments to offer,' says one. 'I am not knowledgeable enough to offer comments,' says another. 'I suggest you get comments from Party A' or 'I have nothing to say' are yet other variations. 'The document is generally acceptable' is another masterpiece of composition. The variations are endless. Now, how does one judge whether the comments are genuine or these are mere attempts at getting rid of a nagging party which keeps



on sending reminders for 'your comments? After all, everyone has some other function or duty to perform. Invariably, standardization work is a part-time activity for a majority of the persons involved. The solution lies in the standards engineer knowing the identity, capacity and involvement of each of the originators of the nil reports. The parties which will not be affected by the document when produced or are not involved in the research, development, production, inspection or usage of the particular item or process could be left out. Their nil reports should be accepted as genuine and kept as a definite input. There could be a variation in their stand later, in which case the nil report is helpful. Where, however, a party is deeply or even partially involved in the item

or process under consideration, standards engineers should not accept the nil report at face value. They should invariably write back and seek its comments once again. A personal letter to one of the officers of the concerned firm or organization is a better approach. The letter should go by name, for this will reduce the likelihood of the communication getting lost in the official mail routes of the organization.

### Change of members

The next most frustrating experience is the change of a member. An organization nominates an expert as its representative on a committee or panel. He moves out on posting or promotion or, maybe, retires and the standards engineer is the last one



to know of this development. The feedback is through returned circulars and letters, which is better compared to absolute silence. When there is no response, one is not so sure whether the member is otherwise busy or is absent. Pleas for 'confirm your attendance' and 'send acknowledgement slips' are useful. However, sometimes even these can fail. It is good to maintain an up-to-date list on a cardex system and write independently to the concerned organization for confirming its continued interest in representation giving the full name of its incumbent representative, address, telephone number, etc. Any returned letter should act as a warning signal to trigger another inquiry as to the details about the latest representative. Absentees in a meeting should also be tackled in a similar manner. Keeping the information about representation up to date causes a volume of correspondence which contributes to the correspondence flood spoken of earlier. An alert person in the department, a periodically updated cardex system and standard format letters can substantially reduce the headache in this area. Frequent change of members does disrupt smooth working of the various committees but then one has to live with the facts of life. Of course, motivating and educating the concerned organization not to change its representatives so often does help.

#### Change of stand

One can manage the change in nomination but the more serious matter is change in stand. You may get a series of nil reports in the initial stages of formulation of a document. Then all of a sudden a representative is found to be vociferous, forceful and emphatic on certain matters. He disagrees on certain technical or procedural issues which you thought were settled. This happens just when

you thought the job was almost over. Nothing could be more unnerving and frustrating. Sometimes the change of nominee automatically involves a change in stand. 'The previous chap did not know anything,' is the usual chant. The ideal thing would be for all the agencies involved to take active part, clarifying their stand early in the day and then sticking on to it except where compromise becomes necessary in the overall interest of the industry, consumer and the nation. The ideal is, however, not achievable. It can only be approached to a certain extent by educating the concerned parties. The change-of-stand problem can be tackled by some active counteraction. The correct service term would be counterattack. First do not just ask for 'comments'. In most cases, you should seek definite replies to definite questions. A questionnaire can be easily devised: Will the document be useful in your production process? How will your existing processes be affected? Will it lead to savings, simplification, improvement, etc? When such questions are specifically asked, the nil comments are reduced, a positive stand has to be taken by the party and, once

having taken the stand, the organization is less likely to change it. Secondly, during discussions in the meetings, specifically ask the participants to give their viewpoint, particularly those who have yet to make their views known. Lastly, give due recognition to the participants. If a person feels involved, he is likely to make his stand very clear, right at the start.

#### The credit bug

Management experts recognize two channels of command, namely, line and staff. Line functions are those where everyone is placed under someone and you can draw a linear organization tree. The other function is the staff function where a specialist gives you advice on his particular speciality. Staff function communication runs across line function. It is usually taken in the right spirit, being specialist advice. Unfortunately, neither of these channels of communication or passing of instructions is available to most of the standards engineers. Except for enlightened companies having their own standards departments, standards engineers have to rely on very



tenuous and nebulous lines of communication. They have to deal with people sitting in companies, firms and organizations far removed from them. The participants have no responsibility or sense of gratitude to the standards engineer. He has to rely on goodwill, charm, persuasion and the sheer power of his personality. All this is an uphill task. An important means of receiving the participants' cooperation is to give due credit to the people who have helped produce the documents. The usual method is by publishing their names prominently in the finally published documents. No doubt it helps, but certain other actions also need to be taken. Once a document gets completed, an appreciation letter should be sent at two levels. The first level is that of the organization the person represents. Better address the letter to the immediate boss of the individual concerned. The next level is that of the individual himself. Better the design, language and presentation of the letters, better the co-operation in future. The next thing to do is to specifically recognize the special contribution made by individual members in the meetings. Names should be specifically mentioned in the meetings and recorded as such in the minutes. Financial remuneration to attend the meetings is a great help. The last, of course, is a firm hand shake, a welcome smile, genuine praise freely given and a general air of welcome when the concerned persons attend the meetings or call upon the standards engineer.

#### Start point problems

We now come to the start point problems. These revolve around where to start and what to start. The committee or the working group has to make a five-year roll-on plan of work. The selection of topics is based on cost, volume, urgency and the extent of activities the document

is likely to affect when formulated. All these have to be traded off against the cost of formulation of the document. This is a very vast, important and crucial subject.

Once the topic has been selected the standards engineer is required to proceed with the job. The first choice always falls on a similar document if it exists. One good document leads to another. Sometimes more than one document may exist. Whatever the case, all these documents must be mentioned in the draft document being prepared. One golden rule a standards engineer cannot afford to forget is to acknowledge the sources of his information. The source document or documents are then to be redrafted, discussed, elaborated, aligned and circulated. Comments received on the draft are also to be circulated. Besides, special checks, such as those in regard to metrication are to be carried out. A good final document should then emerge.

If, however, suitable source document/documents are not available, the standards engineer has to go to the basic data. The basic data may be in the form of drawings, processing sheets, working instructions, inspection record documents, illus-

trated spare parts lists, inspection criteria sheets, master parts indices, etc. There are two aspects to data—whether it is available at all; and, if so, how reliable it is. What data should be maintained is another aspect which the concerned organization itself has to decide. The standards engineer may suggest the method and format of documentation. This is, however, a delicate point. Documentation must first serve the requirement of the organization and only incidentally that of the standards engineer who may sometimes be called upon to exercise his judgement on the reliability of the data. The standards engineer must be capable of culling information specific to his need from the vast amount of data and records available. Patience, selective screening, thorough knowledge of job/process and a clear aim of what is finally required are some of the qualities expected of a standards engineer. So the data may be there or may have to be generated. Getting what you want from the data is a substantial task by itself.

#### The charm button

The standards engineer has to have charm. We have already ob-



served that he does not have line or staff channels at his disposal for issuing orders and instructions. It is his personality and charm which count. A majority of the persons he is dealing with are far removed from him in hierarchy. His appeal, if any, is to national interest, overall interest of the firm or general benefits of standardization. During the deliberations of the meetings, the personality of the standards engineer plays a great part. He not only needs a charm button but also needs to keep it on all the time. Without the charm button, it is doubtful whether he can achieve anything substantial.

#### The consensus syndrome

There is, however, a corollary to the charm button concept which may be called the consensus syndrome. Standardization throughout the world proceeds on the basis of consensus. Even the ISO definition of standardization has the words 'for the benefit and with cooperation of all concerned' incorporated in it. All parties concerned must agree. Only then the document produced will be used and followed by all. But who is to achieve this consensus? This duty falls on the already hard

pressed, less-understood standards engineer. By using his charm, he somehow has to reconcile all the opposing viewpoints and arrive at the consensus. So let no standards engineer feel shy of this onerous task. He is expected to press on regardless and achieve the consensus.

#### A part-time activity

For a majority of technical persons involved in the business of standardization, it will remain a part-time activity. This is not limited to any particular organization, or even a specific country. This is a worldwide phenomenon. An expert is an expert if he is working full-time on his speciality. What is intended is to borrow his services part-time, so that a standard on his speciality can be evolved. And this is how it should be in all technical disciplines and special areas of knowledge. The standards engineer must understand this basic necessity of inviting the specialists as part-time participants. The participants should also understand that their contribution is essential, indispensable and important even though it is part-time. The whole culture and discipline of standardization is based on part-time

participation of a very large number of persons. Just because it happens to be a part-time activity, no one in any field should get away with the idea that his contribution is less, minimal or not necessary. Once again, it is for the standards engineer to explain this point to the large number of part-time participants in the standardization activity.

#### Conclusion

Standardization is an important discipline for any industrialized nation, more so for a developing country. It is, however, not a very well-understood activity. Technical competence or knowledge of the concerned subjects on the part of participants in this activity is, of course, essential but does not automatically make them proficient in handling the activity itself. This is the job of the standards engineer who must have in him a balanced mix of some delicate personal qualities and attitudes which would help avoid certain pitfalls and overcome frustrations that must be faced during the course of standardization work. ●

## Standards Development

—role of Experts, Novices, Scientists\*

Data generated in the course of scientific research are obtained by well trained, experienced individuals. Data for compliance monitoring are frequently collected by individuals with little scientific experience, little understanding of the principles underlying the methods of measurement or test, and little appreciation of the consequences of changing conditions or steps in the test.

Methods written solely by experts for experts will rest on assumptions of understanding and experience not

available to the majority of individuals who will use those methods. The research scientist relies upon a host of clues and signals from past experience to indicate that tests are proceeding as expected or that something is amiss; can discern a nonsensical result from a reasonable result; can judge through review of published literature which individuals are to be believed and which are to be viewed with some scepticism. The inexperienced or untrained individuals will miss the clues and signals and will report the absurd along

with the reasonable. Recognition of this fact coupled with the certainty that no research scientist will devote his or her career to compliance monitoring, leads to the development of rigidly detailed standards.

One of the benefits of the consensus development of standards is that it involves the participations of both novices and experts. It may be the only forum in which both can debate, with mutual respect and understanding, their common experience. The involvement of no-

vices in the development of standards not only provides those individuals with some of the fundamental knowledge they need to perform their analyses more intelligently, it also keeps the experts aware of what information must be contained in a written standard to make that stan-

dard effective and intelligible.

The need for standard methods is perceived more by those who need data from a particular class of tests than by those whose research leads to the development of those same tests. The danger, therefore, exists

that standards could be developed by those whose need outstrips their experience.

\*Excerpted from an article *Resistance to standards development* by Mr. William H. Kirchoff published in *ASTM Standardisation News* (Vol. 12 No. 6 : June 1984).

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**Indian Standards & Amendments published during the period September '84 and December '84, are given below :**

#### **New & Revised**

##### **IS : 10793-1983**

Classification of imperfections in metallic fusion welds, with explanations.—Gr.6.

##### **IS : 3600 (Part 5)-1983**

Method of testing fusion welded joints and weldmetal in steel : Part 5—Transverse root and face bend test on butt welds (second revision).—Gr. 3.

##### **IS : 3600 (Part 6)-1983**

-Do- Part 6—Transverse side bend test on butt welds (second revision)—Gr.3.

##### **IS : 10801-1984**

Recommended procedure for heat-treatment of welded fabrications —Gr.5.

##### **IS : 10803-1984**

Method of sampling and preparation of weld pad for chemical analyses of weld metal from covered electrodes for manual metal arc welding—Gr.2.

##### **Amendment No. 5 to IS : 226-1975**

Structural steels (standard quality) (fifth revision)—Gratis.

##### **IS : 2062-1984**

Weldable structural steel (third revision)—Gr.4.

##### **IS : 10787-1984**

Hot rolled micro alloyed steel plate, sheet and strip for the manufacture of low pressure liquefiable gas cylinders—Gr.3.

##### **IS : 10811-1984**

Oxygen and acetylene manifold regulators for welding, cutting and related processes—Gr.4.

##### **IS : 10842-1984**

Evaluation procedure for Y-groove weld crackability test in structural steel—Gr.3.

## **Welding Spatter**

### **Justification for Technology**

“Concern about technology is justified when one realises that productivity gains depend about 60% on technology, 25% on capital investment and 15% on contributions from labour, and that the growth in the real gross national product correlates well with increased productivity.”

—Dr. J. H. Gross, Chairman, *Welding Research Council, USA* in his “*The Richard Weck Lecture*”, 1982. *Ref. Met. Cons.*, 1983, 15(2) 74-79.

“How does one determine the calibre of a country’s welding technology ?

Is it :

- related to the research efforts
- to the number of new developments reduced to practice
- to the welding productivity e.g. kg/hr deposition
- to patents & publications in the field
- to the number and calibre of the welders & welding engineers practicing the art ?

All these factors are important, but one most likely to forecast the progressiveness of welding technology is the quality & quantity of welding research—keeping in mind that research results not reduced to practice are of little industrial value.”

—Dr. J. H. Gross, a Director of the *United States Steel Corporation*, in his “*The Richard Weck Lecture*” 1982. *Ref. Met. Cons.* 1983 15(2) 74-79.