

GAMMON BULLETIN

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G A M M O N



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IMS POLICY

Editorial

We are pleased to publish January-March 2013 issue of Gammon Bulletin.

We take pleasure in presenting some of our recent significant achievements, learnings, and events from across the country to our Gammon family, our esteemed customers and other beloved stake holders.

Gammon has just substantially completed major packages of civil works and RCC Chimney for 3000 MW Tiroda Thermal Power Project. Being satisfied with the performance of Gammon, M/s Adani Power Maharashtra Ltd. placed repeat orders for another two packages on Gammon. Concrete quantity of the order of 4,90,000 cum has already been poured for this project.

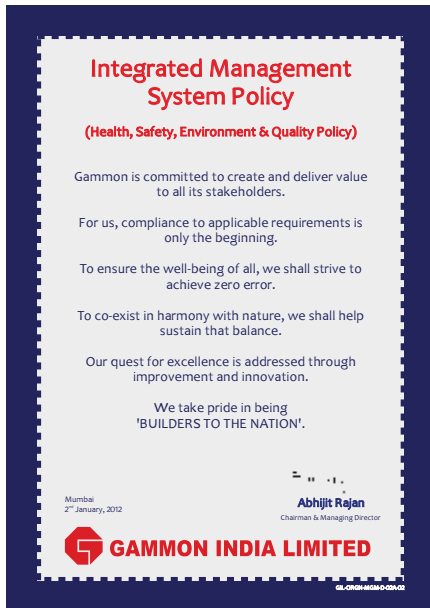
Another article titled 'High Precision Fabrication work for Muthiara TPP at Tuticorin' highlights quality achievement of Gammon for this prestigious project of M/s Coastal Energen Pvt. Ltd. High precision fabrication work of nearly 25,000 t and painting and erection of the same has been successfully completed in a record time with highest standards of quality and safety.

Theory of Constraints (TOC) and Critical Chain Management are buzz words in today's Project Management. Guest Article by K. Ramakrishna, Dr. Reddy's Laboratory exhaustively covers this new concept in Project Management. Some of the learnings of their experiences are thought - provoking and eye openers. Though construction companies are late in implementing the concept of Theory of Constraints and Critical Chain Management, it is never too late to introduce such new developments. This will need paradigm shift from hitherto prevailing practices of Project Management.

Gammon has been bestowed with the prestigious CII Award for exemplary HSE performance at its ISKON Temple Project in Kolkata. Gammon was winner amidst the competition of several top class multi-national companies.

In our quest to continue to improve the bulletin, we will be glad to receive feedback and suggestions from our valued readers to make Gammon bulletin more and more interesting and informative for the readers.

Your feedback and suggestions may be sent to bulletin@gammonindia.com



SAFETY RECOGNITIONS



Jindal Civil Works, Bellary



Malwa NDCT & Chimney



Guwahati Water Supply



Signature Bridge



Pankaj Srivastava
Sr. Manager

1. Introduction

Promoted by Adani Power Maharashtra Ltd (APML), a subsidiary of Adani Power Limited, the prestigious Tiroda Thermal Power Project of 3300 MW consists of three phases: Phase I—two units, Phase II—one unit and Phase III—two units each of 660 MW.

Amidst stiff competition, Gammon was awarded prestigious packages for construction of Multi Flue RCC Chimney and Civil Works for Phase I and II of this 3 x 660 MW Power Project.

Satisfied with the performance of Gammon, M/S Adani Power Maharashtra Ltd placed repeat orders for another two packages for construction of Twin Flue Chimney, for Phase III and Civil Works for Phase III of 2 x 660 MW Tiroda Thermal Power Plant. So far in this project, we have lived up to the brand value of Gammon and had delivered the goods to utmost satisfaction of our esteemed customer.

2. Scope of Works

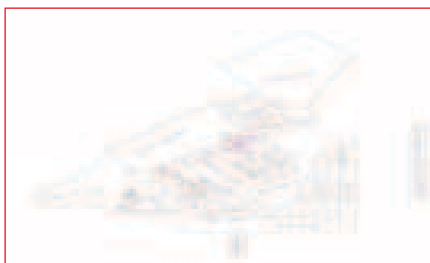
The scope of work includes construction of Civil works, miscellaneous Structural Works and Architectural Works involving Boiler, ESP, ESP Control Building, Fans, ESP/VFD Room Foundations, PA & FD Foundations, Mill & Bunker Foundations, TG Raft Foundations & Deck, MPH Building, CCR Building, Main Power House Floors, ARCW & Air Washer Building, Cold Water System Civil Works, Water Treatment Plant & PT Plant, Coal Handling Civil Works, Ash Handling Systems & AWRS Civil Works, Fuel Oil System, Fire Detection & Protection, Compressed Air System, Hydrogen Generation Plant, Switch Yard 400 kV & 300 kV and miscellaneous Civil Works & Finishing Works for phase I, II and III.

Gammon's Powerful Contribution in Tiroda Thermal Power Project

Also included in the scope of Gammon is, construction of 275m tall Multi-Flue RCC Chimneys for Phase I, II and III.

The civil works, included the foundation for all the major complex structures like TG, Boiler Bunker and others, on which the whole plant was to be built, and hence there was no room for delay or errors. We ought to deliver a timely and quality product with required precision as entrusted upon us.

Shown below is the general layout plant and bird's eye view of initial set up developed by Gammon on fast-track basis:



3. Site Mobilization

Immediately on receipt of the first order on 04th Nov 2008, Gammon swung into action and started mobilizing various resources including manpower, plant and equipment etc. The excavation work of Multi-Flue RCC Chimney was commenced on 14th Nov 2008 i.e within 10 days of date of order.

The overall plant is spread over 1000 acres of land. Various stretches covered in our scope of works were distributed far apart from each other. Besides, because of constraint of space only a small area to set up our site was made available to us. To accommodate lay down facilities, along with monsoon stock in the allocated area was a

challenging task due to acute shortage of space. With proper planning and optimum utilization of space, we managed to accommodate our office, stores, quality lab, fabrication yard, three batching plant, mechanical workshop, parking of 20 Transit Mixers and other movable equipment like JCB, Loaders, Hydra, Bar Bending & Cutting Yard, cement godown, stock and scrap yard etc.

4. Execution

4.1 RCC Chimney—This is one of the largest diameter Chimney in the country (59 m in diameter) wherein RCC raft foundation involved concrete quantity of 13040 cum and reinforcement of 870 t. With meticulous macro and micro planning, the Chimney raft was completed on fast-track basis - 20 days ahead of scheduled time.



Similarly for Twin Flue Chimney we completed the foundation in scheduled time in spite of initial delay in handing over the work space.

The foundation diameter and shell diameter of this Twin Flue chimney was bigger than Multi Flue chimney to cater for better stability.

Since tall structures have its own inherent safety hazards, it was decided to go for additional safety measures. Hence, the support of flue cans were modified at three places, where as the original design had it only at one place at 260 m. This has led to redesigning of load girders at two other locations where additional support was necessitated and re-checking the overall design of chimney was carried out. After receiving the design, the Girders

were fabricated and erection was successfully completed by Jan 2011, which was followed by flue can erection. Considering the urgency of client to light up the boiler, we took up the challenging task of adopting an innovative methodology of simultaneous erection of two flues



which was being done for the first time in India. We took a decision of manufacturing an additional jack with High torque, once again the first of its kind in India. Initially, we faced the problem of grips cutting the strands which hampered the work during first four lifting, but was streamlined later.

5. Challenging Erection Job

5.1 Multi Flue Chimney R.C.C. Shell with Platform

Two Rail Tracks & Trolley were laid which were enough for erection of Flue-1 and Flue-2, there was always a waiting time for Flue Can either in Flue-2 or Flue-3. This was due to the fact that it was coming in the same single rail line of erection due to fixed orientation of Flue - 1, 2 and 3.

1) When we took the combination of Flue - 2 & Flue - 3, at the time of lifting of segment of Flue -2, we could not carry out any ground work for Flue - 3 considering the constraint of space and safety issues.

2) Similarly when the segment of Flue - 2 reached the top as fit-up and welding of erected segment with the new one was in progress; sparks fell on the ground owing to which it was not possible to carry out any single or parallel activity inside the chimney for Flue - 3.

3) The above points were applicable during the erection of Flue -3 as well.

The erection work of Flue - 2 and Flue- 3 was carried out during monsoon; hence we could not achieve the desired progress as welding works got interrupted frequently. Along with erection of two flues simultaneously, we had also taken a challenge of erecting the staircase and elevator which turned out to be practically difficult as the work has to be stopped in either activity during parallel working. As a result of the above our planned activities got delayed.

However clients agreed for extended period of construction considering the positive efforts from Gammon and also due the fact that the reasons for delays were beyond our control.

5.2 Civil Works

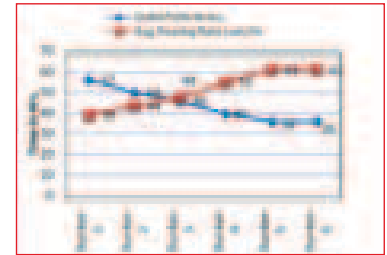
This part of the project was on item rate basis. There was an initial delay regarding the issuance of the drawing due to which we were not able to start the work.

With enthusiasm and team work, we were able to complete and handover, Boiler Area Foundations, Boiler Area Mill/Bunker Building, ESP/VFD Control Room, MPH Building, CCR Building, TG Raft & Deck for Unit1, 2 & 3, ARCW & Air Washer Building, Service Building, CW System Civil Works, Water Treatment Plant, Ash Water Pump House, Ash Slurry Pump House, Fire Detection & Protection Building, Compressor Building, Tower Foundations & Equipment Foundation of Switch Yard of 400 kV & 132 kV etc., by Dec 2011.

By using special Tubular Scaffold for TG deck instead of conventional Truss structure, we were able to improve our concrete rate from TG-1 to TG-3.

The chart given below gives an idea

as to how concreting rate of TG raft foundation and Bunker raft was continually improved:



The highlights of achievements include,

- Successful completion of 4.9 Lakh cum concrete out of total 5.1 Lakh CuMtr in a record time. This volume of work needed engaging over 5000 workers and over 300,000 m of scaffolding pipes including cup lock during the peak time.
- By adopting new methodologies and proper management of resources, it was possible to limit the concrete wastage to one percent (including wastage in concrete pump pipeline) and that of reinforcement to less than two percent.

6. Quality Assurance

Quality is one of the important parameter to be monitored for successful completion of such voluminous construction works. As Gammon has entered in to the private power sector works with this project, it was necessary to win the confidence of client.

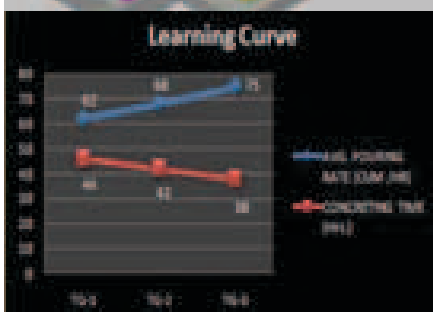
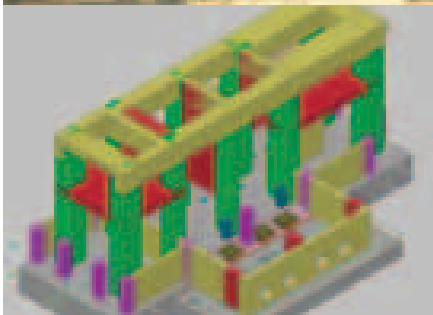
The first thing done was preparation of a detailed QA and QC plan. We believe that involving QA & QC at every stage as an integrated robust approach help in achieving desired standards of Quality. We also provided in-built checks and balances to ensure effective day to day controls.

This was followed by formation of quality circles to continually improve quality, various other steps like use of Cuplock scaffolds (in lieu of conventional staging pipes), providing centralized yard for reinforcement and formwork, carrying out post pour analysis, collecting feedback of pour analysis from similar structure also helped a lot in quality control.

7. Feedback

Brainstorming discussions and feedback on problems faced and remedies thereof was an integral part of our daily routine. Based on such brainstorming sessions several creative and innovative techniques were adopted on regular basis. Weekly internal audits by quality circle, and review of audit reports also helped us constantly in maintaining and delivering good quality services to our clients.

We also involved experts from CQRA and others for training of our Engineers and supervisors. Under their expert guidance, implementation of checklist and standardized formats was done for compliance of quality standards in various activities like shuttering, reinforcement, providing foundation bolts etc.



Awards and penalties for deserving supervisors and engineers on weekly and monthly basis was a routine and presentation of awards in presence of distinguished dignitaries encouraged others to improve their performance.

8. Safety

Safety is something which, we strongly believe, is everybody's responsibility. To keep the morale and spirit of the team high, it was very important to prevent any accidents, though at Tiroda project the possibilities of minor and major accident were quite high. To minimize this risk, we introduced effective induction programs on Safety, Health and Personnel skills.

Following are some of the initiatives that helped us a lot in clocking several million safe man-hours:

- At regular intervals the safety induction programs were organized
- PPEs were distributed to workers and its application was diligently enforced
- Third party safety training by inviting safety experts was organized
- Daily tool box talk, daily mock drills and in-house training were conducted on a regular basis
- Various awards like Monthly Safety Award, Quality Awards Good Housekeeping Awards, and Best Engineer Award were given to keep the morale high
- Video Message collection from families of labors and broadcasting the same at Site, Safety Awareness programmes, screening of Safety Movies and Safety Exhibitions etc. were all conducted at site on a regular basis

9. Stores Management

Store Management was another challenge in this project, as the work sites were spread away from stores and different type of electrical and mechanical materials were to be used. A new method of white board display was used to monitor the daily consumption and stock levels.

It was not just the planning and methodology alone, but it was the strong leadership and our commitment that aided us to achieve this feat.

It is one thing to frame certain guidelines, but to make others to move on those lines is something which

needs different qualities in both the leader and the followers.

10. Achievements

Gammon's work has been appreciated by various visiting dignitaries and Gammon was conferred with various awards in recognition of its enviable achievements, including three National Awards (Safety, Design & Construction of Chimney, 5S).

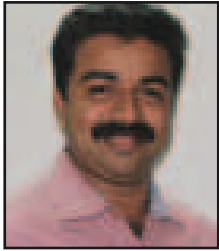


11. Conclusion

The works, for which drawings and fronts were made available, have already been successfully completed by Gammon. There are some civil works yet to execute, which will be completed by 2013. Personally there were lots of learning for us in this project including new methodology and different ways of self-improvement. We take this opportunity to thank our young and energetic team at site without whose support this success would not have been achieved.

We also thank Mr. Vineet Jain, CEO-Adani Power, and Mr. O. P. Bhardwaj, Project Director-Tiroda for their invaluable support which had contributed immensely to our success. We also thank our Executive Director Mr. A. B. Desai and Corporate Office for their utter faith in us and giving us the confidence to walk the new roads in construction field.

High Precision Fabrication Work for Muthiara Thermal Power Project at Tuticorin



V. S. Chacko
Manager I

1. Introduction

Conceived by M/s Coastal Energen Pvt Ltd, (a flagship Company of Coal & Oil Group, Dubai), the prestigious 5200 MW Muthiara Thermal Power Plant Project started its first phase of 2x600 MW Unit in Tuticorin, Tamilnadu in November 2009. Amidst stiff competition, Gammon secured prestigious contracts for all the Civil work pertaining to Boiler, Turbine, ESP and structural work of BTG including Fabrication, design and construction of 275 m tall chimney.

Though Gammon is well known in the construction industry for its leadership and innovation in all types of projects, massive structural steel work of over 25,000 t (involving fabrication, painting and erection) with high quality and precision to be completed in a time-bound schedule was a new challenge, even for Gammon.

This article intends to provide an overview of the challenges encountered during execution of work and a detailed insight into the innovative approach adopted to successfully overcome these challenges.

2. Mobilization of Resources

Gammon mobilized four state-of-art Gantry cranes of 35 t capacity on a rail track of 500 m length, apart from the following equipment in ample numbers:

- 500 SMAW machines
- Ten SAW machines
- Eight GMAW machines
- 15 Hydra cranes with 15 t capacity in fabrication yard
- Two 250 t crawler crane
- One 200 t crawler crane and one 80 t wheel mounted crane
- One 75 t crawler crane

- Five hydra cranes of 15 t capacity for erection work

In addition to the above fleet of plant and equipment, two trailers of 13 m and 7 m for transportation and erection purpose were provided.

3. Fabrication

The basic structural design was carried out by TCE on behalf of clients. Based on these basic designs, detailing and shop drawings were prepared by Gammon and submitted to TCE for approval.

The grade of steel ranging from IS 2062 Grade A, Grade B, Grade C and IS 1239 & IS 1161 for pipe section was used. To ensure lamination free plate section, care was taken while making Purchase Order of saw machines by requesting UT passed sections. Most of the materials are procured from Indian manufactures like SAIL and ESSAR through part of materials are imported from Ukraine and Korea. Plates were also tested and certified by our site established laboratory.



SAW Machine for Built Up Column Welding

As per the approved cutting plan, materials are issued from store on a day-to-day basis. Materials are issued only after submitting approved cutting plan from Section in-charge for each plate with respect to the size available in stock to reduce the wastages and off cuts. The sizes of available off cuts for each plate thickness were updated every day in central store for proper usage at later stage or redesigning the structures with respect to the available off cuts.

While edge preparation is done based on the plate thickness/welding requirement, welding is done after

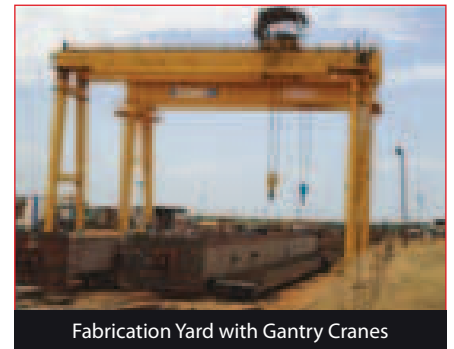
obtaining clearance firstly from GIL's internal quality team and secondly from clients.

Only qualified welders as per ASME section IX were used for all our structural works. About 500 welders were selected after screening 700 plus welders. In order to cover entire site requirements, ten welding procedures were established.

SAW and SMAW machines were widely used to perform the procedures (electrode grades vary from E 6013, 7018, 7018-1, S 708 L16 and S709 L16).

After completion of welding, ND tests were carried out. The volume of testing involved was massive as shown below:

- DPT - 13,700 Rmt
- MPT - 5800 Rmt
- RT - 5300 Rmt
- UT - 2400 Rmt



Fabrication Yard with Gantry Cranes

Once the structure has passed required quality tests, final inspection was carried out and all the welded joints were ground properly and forwarded to painting yard.

The completed and approved structural members are transported either by trolley over rail or by trailer to the covered grit blasting unit.

Blaster qualification is done with various agencies according to Swedish standard SIS-05 5900-1967 / ISO -8501-1-1988 (surface preparation standard for painting steel surface).

Prior to grit blast, identifications were marked on the surface of each structural member by punching. All welds were be properly cleaned. Any burns spatters were removed. Grit size of 6 mm to 1.6 mm is used for blasting purpose.

The coating provided included one

coat of High build organic Zinc silicate; second coat of titanium dioxide/micaceous oxide epoxy, third coat with pigmented poly amide cured paint and final coat of polyurethane pigment finish with a total finish thickness of 250 microns.

4. Challenges

Such a massive high-precision fabrication work obviously involved several challenges, some of which are briefly discussed below:

4.1 Wharfing/distortion of columns

To ease transportation and erection, all the columns were fabricated in two or three pieces. Due to high requirement of weld deposit; the temperature was increased in the heavy built up columns which unfortunately resulted in the wharfing of the column flanges. Since any deformity in web or flange will cause greater challenge during erection at heights, they were corrected with the help of a frame fitted with 500 t jack and distraction was brought within stringent permissible limit of 3 mm.

4.2 Chamber formation due to excess heat

To avoid the common problem of chamber formation while cutting heavy thickness plates, the other side was heated and straightened before fit up and welding.

4.3 Generation of off cuts in higher thickness plates

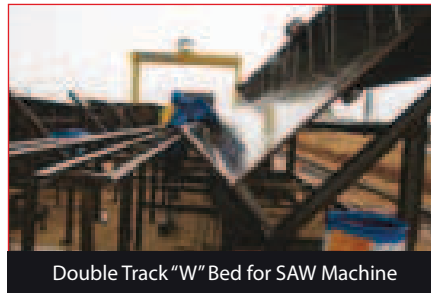
When higher thickness plates are used as flange or web in columns, controlling the off cuts produced from 40 plus mm plates is a perennial issue. The problem is accentuated by the fact that the longitudinal joints were neither allowed nor viable in higher sized plates.

While preparing shop drawings for structures other than columns, our structural engineers along with the design office explored the possibilities of redesigning the structures with off cuts available based on daily updated report of off cuts in stock. By doing so, it was possible to control the wastage and the quantity of off cuts was reduced from 1700 t to 700 t.

4.4 Welding of Built up columns using "W" shape bed

The variation in the column length (from 30 m to 65 m) posed a challenge

when it came to the speed of welding process using SAW machines with 'W' shape welding beds. To overcome



Double Track "W" Bed for SAW Machine

this limitation, two columns were processed simultaneously using two SAW machines. The quality of weld and deposits were excellent and output was far better than normal welding.

4.5 Mass production Rolled section beams & Bracings

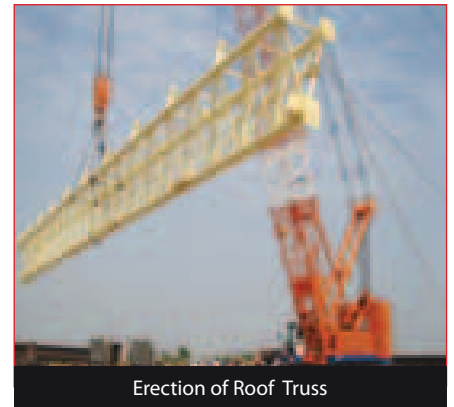


Jig for Mass Rolled Section Production

To improve productivity in back to back or box type welding in rolled section members, screw fixed welding jigs were preferred. This resulted in high production and we were able to produce perfect weld thick with a good alignment.

5. Erection

To negate the challenges due to heavy weight structural columns and windy weather of coastal region, all major erection was taken up in the morning session. We also ensured that sufficient guyropes guide were provided, when erecting an interconnecting bracing to the adjacent structure. Butt welding of column flanges were completed the same day and it was made sure that fish plates provided in web was kept intact until the final welding was completed. In addition all the Butt welding were Radiographic Tested and only tested welders were allowed to perform the welding in the heights.



Erection of Roof Truss



Erection of Coal Bunker

6. Safety

The following initiatives were undertaken to ensure high safety standards during execution:

- All the fabrication and erection process were carried out only after the approval of Hazard Identification Risk Analysis by the safety team
- A 24 X 7 safety surveillance was ensured
- Proper illumination was ensured during night shift work
- A first aid room with the service of male nurse was made available at site in addition to a full time doctor provided by clients, on a 24 X 7 basis
- All lifting tackles and equipment were tested by external agency and SWL and color coding was provided accordingly
- Mock up drills were conducted at regular interval. Training on usage of PPE's and fire extinguishers was arranged through external agencies

- Tool box meetings helped a lot in improving safety performance and were invariably carried out everyday
- A short film on safety was premiered on every Sunday evening in labour colony followed by a commercial film to achieve dual objectives of increasing the safety awareness and entertainment

7. Conclusions

Unlike executing civil works, high precision Fabrication works involve adopting different approaches which demands meticulous initial planning. As the work progresses, there is always a need to revisit the initial planning to suit the changing circumstances.

Maintaining stringent standards during fabrication and erection work is yet another challenge. With Gammon team's

inherent creativity and innovation-oriented mind set, it was possible to meet stringent quality standards by successfully overcoming all challenges which are usually associated with such massive fabrication and erection works.

The entire Gammon team is in-debted to the team of Consultants and Clients, as without their active involvement, professional approach and positive support it would not have been possible to achieve this success.

BRICK AND MORTAR OF PLACEMENT BY HR!

Where to place a new employee is always a challenge.

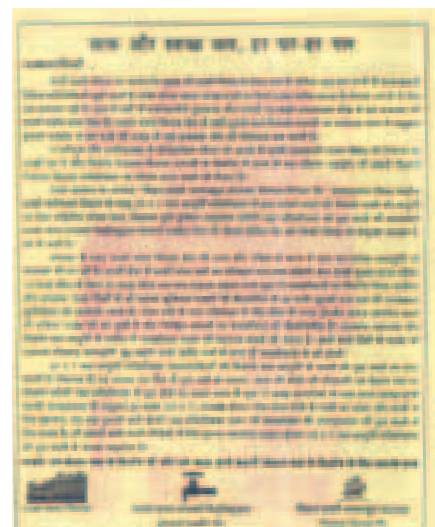
HR found a creative way out. They accommodated all new employees in one closed room and provided 500 bricks to them. The doors were closed and the

new employees were left alone for eight hours. HR Head returned after eight hours to analyze the situation.

Based on the analysis of the situation, HR framed seventeen rules for placement as follows:-

Rule No.	If.....	Placement
1	If they are counting the bricks,	put them in Accounts Department
2	If they are recounting the bricks which have already been counted and tallied earlier,	put them in Audit Department
3	If they are rearranging the bricks in some strange order,	put them in Planning Department
4	If they are debating and arguing on shape, size and strength of brick,	put them in Engineering Department
5	If they have already left for the day,	put them in Marketing Department
6	If they say they have tried different combinations, they are looking for more and yet not a brick has been moved successfully,	put them in Tendering Department
7	If they are found cannibalizing bricks,	put them in Plant Department
8	If they are trying to prove rejected bricks as good,	put them in Purchase Department
9	If they have broken the bricks into pieces,	put them in IT Department
10	If they are unduly restricting height of stacks of bricks,	put them in Safety Department
11	If they have messed up the house-keeping of whole place with the bricks,	put them in Administration Department
12	If they are found sleeping,	put them in Security Department
13	If they are sitting idle doing nothing,	put them in HR Department
14	If they are staring out of the window,	put them in Strategic Planning Department
15	If they are throwing the bricks at others,	put them in Operations
16	If they are not parting with the bricks but keeping bricks close to their chest,	put them in Finance Department
17	If they are not talking to each other and trying to topple each other, congratulate them and	put them in Top Management

Phamplets Circulated by Patna Water Supply Project Team



**K Ramakrishna**Dr. Reddy's
Laboratory

Introduction

In this paper, I present a different approach for managing projects in multi project environment. The implementation is done in one of the top five pharmaceutical companies in India for managing the new product development process (NPD). Company has acknowledged Project Management as a significant competitive edge and defined the organization structure for managing projects much earlier than others. Tools and techniques are in place for creating the project plans and tracking the projects. Development process is mapped out, Phase gates are defined and Project templates are prepared with the micro level activities. Enterprise Project Management system is rolled out for tracking the status of the Projects. Ambitious targets were set for cycle time and throughput and the teams started the journey very positively.

Many new product ideas are pushed to development teams and the teams are encouraged to start the work as soon as possible. Development teams started to work on all the opportunities indicated by business as soon as possible in order to not to miss out any opportunity.

We believed that by starting the project as early as possible, we can deliver the project on time and we will have sufficient time to handle the issues of the projects during the development. This belief has pushed many projects in development pipeline.

When too many projects are executed simultaneously many resources found themselves under pressure to work on more than one activity at a time. Also, there was frequent need to prioritize the work between the projects as the

Paradigm Shift in the way we manage Projects

teams are flooded with work. But there was no formal priority list available for all the functions. Focus is shifted from resolving the issues of current project to starting a new activity in another project as there are plenty of the projects to work on. Bad multi tasking pushed the local priorities for each function and negatively influenced the overall progress of the projects.

In the rush to start working on the project as early as possible, the preparations are often ignored and there are instances of slowing down after the project is introduced into development. Missing preparations prolonged the lead time of the projects and effected the synchronization.

Over years, Company has realized that the results are far less than the targets set. Throughput is not consistent, delivery is not reliable and the cycle times were still high. There is huge dissent in the overall system and the resources are stressed out due to crisis mode of management.

Project Managers are stressed with frequent changes in prioritization of the projects.

This is the time, company is introduced to CCPM [1] world, a new way to address the challenges we were facing. With the help of CCPM concepts, we could analyse the root cause of the challenges we faced and implemented appropriate solution to each of them.

CCPM is an application of TOC [2] principles in Project Management.

Theory of Constraints (TOC)

Every system was built for a purpose and has a goal. A system's constraint is anything that limits a system from achieving a higher level of performance versus its goal.

To improve any system, the following five steps of focusing are used.

1. IDENTIFY the system's constraint according to their importance on the goal
2. Decide how to EXPLOIT (make the most out of) the constraint Make sure to use the constraint to the maximum extent possible
3. SUBORDINATE everything to the above decision
All the other resources of the system should be managed in such a way that they should supply all that is needed for the constraint of the system
4. ELEVATE the system's constraint Find / invest in additional capacity or alternatives
5. If at any time in a previous step a constraint has been broken go back to Step 1 and "do not allow INERTIA to become the constraint"

Implementing these five steps will help any organization to be in a process of ongoing improvement, where change is not an exception but rather as norm. Where change is on-going, we must be much more methodical in our approach to the improvement process itself; otherwise it is just a matter of time until we give up and the organization will once again stagnate. The methodology to bring any change or improvement in a TOC way lies in answering in following three questions,

3 Questions

1. What to change? (Pinpoint the core problems)
2. What to change to? (Construct simple, practical solutions)
3. How to cause the change? (Induce the appropriate people to invent and implement such change)

CCPM solution has been detailed using the reference of these three questions

Core problems in managing the projects (What to change?)

About the author

Mr. K. Ramakrishna has expertise in implementing the Project Management process and has been responsible for implementing the best practices in Project Management across Dr Reddy's. He managed roll-out of Project Management Tools namely Microsoft Enterprise Project Management (EPM), SAP Project Systems, SAP Projects and Concerto. He leverages the experience of Software development in quickly rolling of the tools. He handholds Delivery Heads in setting up metrics, design the organization structure and set up the governance mechanism. His experience helped Dr Reddy's to smooth rollout CCPM initiative in Dr Reddy's. He is a certified Project Management Professional from PMI, USA.

Safety in Task estimates

It is very common to believe that the key to on-time delivery of a project is to complete each task on-time and make people accountable for each task by turning each task estimate into commitment. When people are evaluated based on the on-time task completion, they tend to put some amount of safety in the task estimates so that they can cover up for the lost time due to uncertainty.

What is the level of safety built-in in our task estimates? The typical answers will vary from 50% to 100%. This is never explicitly mentioned any time. Also safety increases with experience and number of reviewers of the project plan.

Figure 1 shows typical variability in task execution and its impact on our estimates.

Though the median time is around 50%, we generally quote around 90%. So, we take care of this variability by padding each task estimate with safety.

Here we need to understand that estimate is an estimate. It is a range of possibilities. Though every project is different, two things are common in all the projects – Uncertainty and Variation. The degree may vary from project to project, time to time, but uncertainty and variations are always there.

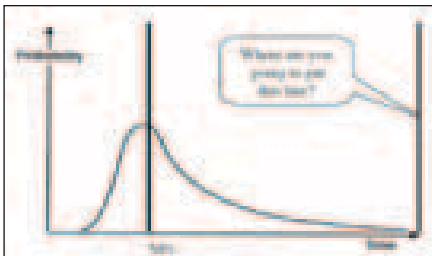


Figure 1

While estimating we do account for this and most of the time it is implicit. Typically our worst experience drives the padding of task estimates.

However, the safety embedded in the task is seldom used. Let's understand why?

Student Syndrome

It is human nature to delay the start of the task at hand, especially when there is safety embedded in it.

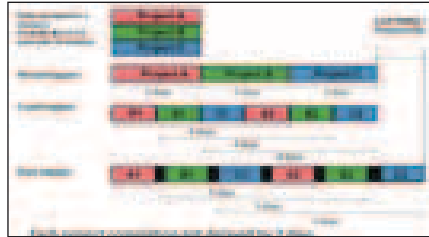
When the work is actually started and if there is a problem, we become aware of

it in the end when it is too late and start working in crisis mode.

Since most of the safety is hidden in the task duration, nobody knows how it gets wasted.

Parkinson's Law

The Parkinson's Law states that "The work expands to fill (and often exceed) the available time".



In projects, there are several dependencies in between tasks. A delay in one task is passed, in full, to the next task. However, an advance made in one task is usually wasted. Strangely, there is little or no incentive to finish ahead of time.

If you finish a task earlier than planned, you might be accused of sandbagging your estimates instead of being rewarded for completing ahead of schedule. Your future estimates are cut based upon history.

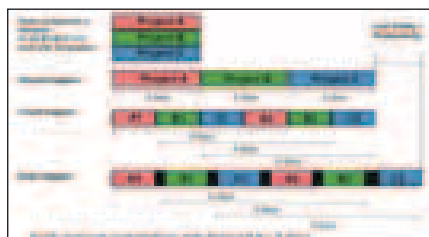
Even if you finish your task early, the next task may not be ready for an early start as the start is date driven. Further, you are not liked by your colleagues who are struggling to meet their due dates.

Under the circumstances, people tend to review their tasks again and again or keep polishing them or waste their time rather than reporting early finish.

Dependencies

In projects, we also have parallel dependencies and tasks integration points. In the case of parallel steps, the biggest delay is passed on to the next step. All other early finishes do not count at all.

Bad Multi Tasking



Many people believe that multi-tasking is an important skill which helps us to do better and better. In multi Project environment multi-tasking is counter-productive.

Resource assigned with multiple tasks switches in between the projects frequently due to lack of formal priorities and push by the Project Manager. As a result, the work on each task stopped frequently and work on another task is started. It takes some time to prepare for the new task and the resource again switches to another task before the earlier task is complete. In a rush to show the progress and satisfy every one, each project completion is prolonged much more than expected.

Murphy's Law

The Murphy's Law states that "If anything can go wrong, it will". For instance, If you perceive that there are four possible ways in which something can go wrong, and circumvent these, then a fifth way, unprepared for, will promptly hit. So task safety gets wasted when Murphy strikes.

Summary of why and how task safeties are wasted

We try to protect the performance of each task. Most of this protection is wasted. Despite so much of safety, the project as a whole is exposed. Perhaps, putting Safety at task level may not be a good idea.

The only thing that counts is the performance of the project as a whole. We don't have to win all the battles, as long as we win the war! Similarly, it doesn't matter how many tasks are not completed on time...as long as the project is delivered as per the due date.

We either need a crystal ball which will take us ahead in time to see what is going to happen so that we know where the safety will be needed. We need to find a better way to manage the safety.

Solution to the Core Problem (What to change to?)

CCPM provided the solution for managing projects in TOC way.

The solution lies in answering the following questions:

- How to reduce bad multi tasking?

- How to prepare a project before release into execution?
- How to use the safety better against uncertainty?
- How to manage safety during execution?

Reducing Bad Multi Tasking at Organization level

List of all the projects released for development is prepared and projects are prioritized. Around 25% of the Projects in the bottom of the list are frozen. List of open projects and frozen projects are circulated formally by the Top Management. The work is formally stopped on the frozen projects and resources from frozen projects are moved to work on the open projects. This step has significantly reduced bad multi tasking and increased the pace of execution on open projects.

A frozen project will be released only after completing an existing project. A new project will be released based on completion of all the frozen projects. Priority is assigned to frozen projects as well new projects.

Ensuring Preparations

A team of project managers and function experts has identified the list of preparations (Full Kit) required to ensure smooth execution. A team of experts are dedicated for doing the Full Kit before projects are released to development.

The activities which should be titled as preparations are officially defined (Strategy, Licenses and Materials etc).

A Project is rarely released in execution without complete full kit.

Safety at right place

It is not important to complete each task on time, it is essential to complete each project on-time. Trying to complete each task on time will lead to increase in task safeties and thereby significantly prolongs the overall cycle time of project.

To protect the completion date of entire project, we should shift the safety embedded in each task to the end of the project.

How do we identify how much safety is embedded in the task?

- 1 If we do some statistical analysis,

- it will lead to distorted picture.
- 2 If we ask the people estimations for task durations, then we will get wrong impression that there is no safety in each task.

Each task estimate is cut into half. After cutting the task duration, task estimates are made aggressive but possible.

Tasks with no variation in the duration during execution should be mapped as Fixed Lead time task (example: Curing of a slab). Task estimates are not cut for these tasks.

Review the tasks where there is no possibility of completing within the duration after 50% cut (ex: done by external agencies and driven by SLA and contracts). Task estimates are cut by 25% for these tasks to make them aggressive but possible.

Since it is essential to complete each project on-time, we need to have safety at project level. But the safety required for a project is not equivalent to sum of the safeties cut from each task.

Now the safety will not be wasted, gains will be transferred; delays and gains will compensate each other. Thus we don't need all the safety that was embedded in each task.

Vast experience shows 50% of the aggregated safety taken from each task is good enough to protect the overall project.

Important: This mechanism works only if the task estimates are not measured as commitment.

Example: A simple project with 6 tasks is mentioned in Figure 4

There are two paths (chains) in this project.

Path 1: T1 – T2 – T3 – T4

Path 2: T5 – T6

Path 1 is the longest path in these two paths and is popularly known as critical path. However, it does not take resource dependencies into account. Y is the resource need to work on T1, T2 and T5.



Figure 4

As a result, either the task will start late or it will lead to bad multi tasking as the same resource (Y) needs to work on both the activities (T2 and T5).

TOC introduces critical chain to address the issue of resource dependencies. Critical chain is identified based on the longest path as well as the resource dependencies as shown in Figure 5



Figure 5

Critical chain identified is T1 – T5 – T2 – T3 – T4

Now we understand that the Critical Chain determines the length of the project and it is the constraint.

If Critical Chain is the constraint, how do we exploit it? We need to make it sure that the Critical Chain is always focused on. The tasks on Critical Chain should receive the highest level of priority. However, this is not enough.

In order to ensure that the variability of the tasks not to delay the Critical Chain, we must protect it with safety by building safety (time buffer) between the Critical Chain and the Project delivery date. This buffer is created by cutting the task estimates into half (Figure 6) and moving the safety to end of the Project (CCCB / Project Buffer as shown in Figure 7).

During the critical chain identification, tasks are scheduled As Late as Possible instead of As early as Possible. This will ensure to start the paths (chains) start as late as possible to avoid bad multi tasking.



Figure 6

However we need to protect the chains (non critical paths) feeding into the critical chain. Hence buffers are placed

at the end of the feeding chains (T5 – T6) as shown in Figure 8.

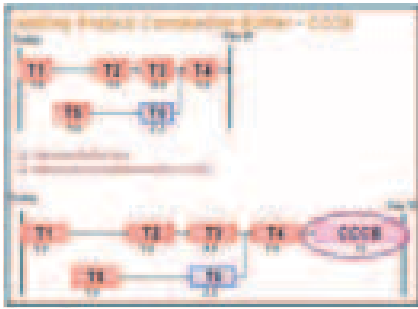


Figure 7



Figure 8

Key differences between traditional planning and CCPM are shown below in Figure 9.

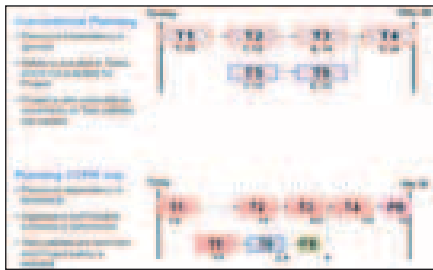


Figure 9

Roll out of a new Project Management system based on CCPM methodology (Concerto) has been rolled up. It help in creating the Plans, track the status of buffers of each project, health of portfolio of projects.

Execution

Once the Critical Chain is identified and buffers are inserted for each project, it is important to set up a mechanism to track the buffer status of each project and health of each portfolio.

Buffer Management is a server task, scheduled to run every day to calculate the impact of the task updates on the critical chain completion and buffer consumptions of each project. It stores the information of Buffer consumption and Chain completion of each project every day. This enables concerto to

- Determine the status of Critical Chain & Buffers for all the projects
- Determine the health of the portfolio status and categorizes

the projects in Zones (Red, Yellow and Green)

- Provide the visibility of penetrating tasks into buffers
- Display the trend chart with respect to Buffer Consumption and Chain completion (daily/ weekly/monthly)
- Determine the Projected (Latest Estimate) date of project completion
- List tasks in the order of priority
- List Tasks that are not progressing / need help
- List Tasks that are not started though they are ready to start

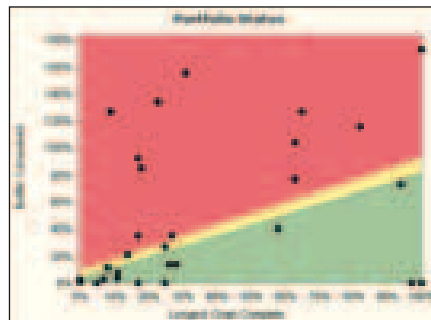


Figure 10

Trend Chart

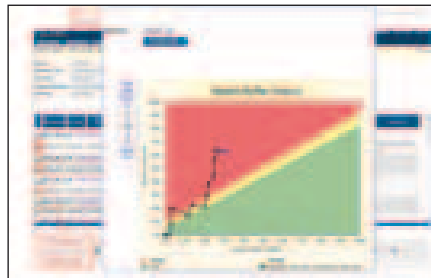


Figure 11

Task Management

Task List Screen in Concerto shows the tasks priority wise, tasks ready to start, tasks need to be prepared.

Daily update of the task is done in less than Ten minutes. Task need to be updated every day (Remaining duration for IP Tasks, comments and help needed).

Role of the key stakeholders are defined and mentioned below:

Task Manager

Every day the task manager gets two lists of tasks: The list of tasks currently being executed and the list of tasks that are incoming, both sorted according to their up-to-date priorities.

Figure 12

Task Manager updates the remaining duration of in progress tasks every day and ask for help if the task is not progressing.

Task Manager should follow the concept of relay run i.e. task once made In Progress should be finished as early as possible.

For each incoming task, the task manager ensures the necessary conditions to start the task are in place: strategy, approvals, designs, (uninterrupted) resources etc.

Project Manager

Project Manager review daily the list of tasks penetrating the most into the project buffer and ensure the recovery actions required to ensure effective progress of the project.



Project manager verify the preparations required for the upcoming tasks and identify the bottlenecks in doing the preparations / executing the tasks.

Delivery Head

Delivery head reviews the recovery action's progress for the Red projects or projects with deteriorating trend.

Delivery head resolves the issues that are escalated by Project Manager.

Delivery heads takes actions to resolve the portfolio level bottlenecks and prioritizes the projects based on the buffer consumption.

Delivery Head makes sure that the WIP is maintained as defined and ensures the release control.

How to cause the change? (Induce the appropriate people to invent and implement such change)

The solution has been detailed out using Strategy & Tactic Tree (S&T Tree). It demonstrated a plan for successfully implementing the strategy, what actions must be taken, by whom and when. Resistance to change can block even the most perfectly laid strategies and plans and hence building active

consensus and collaboration, or buy-in is crucial.

After going through the workshops using S&T Tree, Top Management has agreed to the solution and formed a team to roll out the process. CEO of the company has personally reviewed the progress periodically.

A glimpse of S&T Tree methodology has been given below



Each node in the S&T Tree is a proposed change that answer the following

Necessary Assumption	Why the change is needed?
Strategy	What is the specific measurable objective of the change?
Parallel Assumption	Why do we claim the Strategy is possible and what specific requirements, potential negative branches or obstacles must be considered when selecting the tactic for achieving the Strategy?
Tactic	How to achieve the objective of the change ex: what changes should be made to processes, policy or measurement?
Sufficiency Assumption	This assumption is not always the part of S&T Tree. The sufficiency assumption tells us what we must pay attention to, otherwise we would fail to achieve the strategy and its related tactic

CCPM has been formally recognized as the operating system of managing product development projects. A dedicated team is created to implement the solution and handholder all the stakeholders.

Results obtained

The cycle times are reduced by 30% and the Due Date Performance (DDP) is improved from 25% to 75% [3]. It is easy to get the initial results with CCPM approach, the real challenge is to sustain the culture and results despite change in portfolio, changes in key stakeholders. This company has been successful in implementing the CCPM culture and procedures and in the process of ongoing improvement.

References

1. Dr Eli goldratt, "Critical Chain", North River Press
2. Dr Eli goldratt, "What is this thing called Theory of Constraints", North River Press
3. <http://videos.realization.com/results/default.aspx>

Winning The Prestigious CII Award -The Gammon Way!

- By Corporate Safety & Subhankar Sil

We take immense pleasure in announcing that the ISKCON Project, one of the esteemed Projects of Gammon India Ltd. is being bestowed with the prestigious award from CII for the eastern sector on 30th of March 2013 most likely by the honourable Chief Minister of West Bengal. The award was secured after a corporate safety presentation on the safety management practices of Gammon at ISKCON. The presentation was made by Mr. Prakash Tikare, VP (HSE & Systems), Gammon HO, along with the Project authorities (PM and Safety in charge). Participation in the CII HSE award was an ambitious decision - thanks to Mr. Prasanth Pilanku (CMS) and Mr.Subhankar Sil (PM), who had faith and confidence in their team's ability to deliver. We all know that Mr.Subhankar and his safety colleague Mr. Abdus Sattar have got similar recognition from NSC in their earlier project at Kadappa as well as ISKCON Project.

The application requirement for CII was not an easy one. It focused not only on safety practices, but on overall HSE management. The implementation of IMS (Integrated Management System) for over the last two years had directly or indirectly touched on all components of HSE. The Corporate Safety and IMS team are very confident that today, many of Gammon sites are in a position today, to present their case in all these areas with some degree of maturity. We also considered reviewing our various initiatives in safety and IMS implementations by independent experts in these fields to benchmark ourselves with respect to the 'Best in Class' Multinational Organisations. This recognition re-affirms that our safety and IMS implementation is in fact in the right direction, and can be sustained with continued support from the management at HO and at the sites.

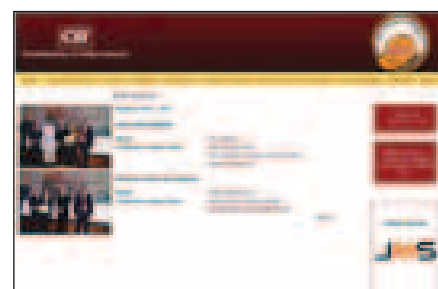
ISKCON Temple project on completion will be the largest Hindu Temple in the world with a height of 108 m and a Floor area measuring nearly to 60,000 Sqm. The temple have unique Architectural features with a 'Dome' of 54 m Diameter, Chatris, Arches for using sophisticated technique with the help of laser and

light to show the Vedic Cultural values on completion of the temple construction and on its inauguration.

In order to meet the quality criteria of building the temple to age at least 500 years, Stainless Steel Reinforcement has been used in Sub-Structure which consists of 2300 nos. in Cast Situ Piles. Cast in Situ Superstructure up to 50 m from GL (Ground level) had been completed so far and the erection of Stainless Steel Dome structure over the Superstructure had commenced.

As the new Temple is being constructed adjacent to an existing Temple of ISKCON Mayapur, a renowned tourist spot of West Bengal, extra efforts were in place to ensure highest Safety standards.

Earlier, an honest, vigil, dedicated and smart work in ensuring 3.5 million safe man-hours paid off as we secured NSC award of "Prashansa Patra-2011" for ISKCON Site. Hence, the inspired and motivated site team with strong support from corporate safety team took up the challenge in competing CII ER Safety award, along with top class multi-national manufacturing units like ITC, TISCO, Telco, Tinplate, Tata Sponge Iron, Tata Power, Tata Metaliks, Tata Cummins, Coca Cola, Exide, Balco etc.



Gammon India Limited is listed on the web-site of CII ER safety (<http://www.ciisafety.com>) as one of the SHE Award winner.

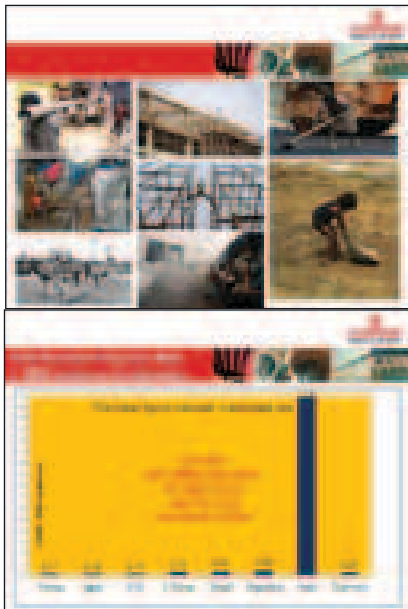
Following are some of the insights from the presentation made to the jury on the challenges faced by of the construction sector, and Gammon's approach to Safety Management:

- Construction sector being the second largest Labour intensive, unorganised work sector with illiterate labours, language barriers and cultural differences

incurs second highest number of fatalities in India, next only to Road Accidents.

(Courtesy NPCIL Safety Presentation to AERB)

●The fatal accident rates in construction works among advanced countries like



France and South Korea ranges from 0.17 to 0.35. Whereas, the figures pertaining to Japan and USA are 0.18 and 0.19 respectively and countries like Brazil and Argentina has figures on the high side, 0.43 and 0.49 respectively.

●It is heartening to note that Gammon's figure stood at 0.29 comparable with developed countries.

●Unfortunately, there are no figures readily available for Indian Construction Industries to benchmark but figures estimated from the Insurance payment on fatal accidents and the Workmen's compensation paid, point towards a high value of 15.8.

●Gammon's approach to Safety management on the "five pillar" model for performance excellence had paved the way for continual improvement in all the areas of 'Safety Management'. We are proud to claim that some of Gammon's Projects have achieved greater better maturity in its implementation.

●The foundation for a proactive safety management and safe working practices were strongly laid by the top management of Gammon in its "Vision, Mission and Policy statements". It also promotes other social good habits and practices appropriately stressing awareness measures on various faculties

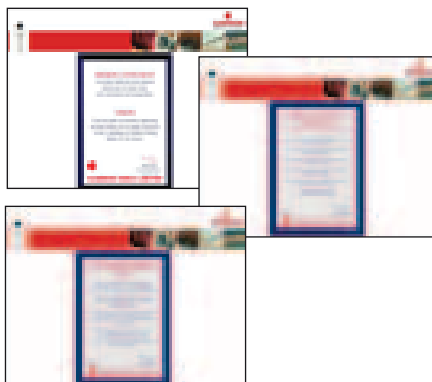
of socially responsible practices such as "no smoking-no alcohol-no drugs", HIV-Aids policy etc.

●The safety management structure is well established with dual reporting method, continual contact and communication between Corporate Office, Regions and the Project Sites with a good monitoring system.

●Safety management practices were further strengthened through competency mapping and appropriate matrices for structuring the safety function.

●Tool Box talks, 3Q meetings, E learning etc., played an important role in improving safe work practices among Gammon Sites.

●One of the innovative methods used for safety education and implementation at all Projects, including ISKCON was the exclusive use of the "Gammon intranet". The site allowed sharing of important and innovative informations from other Projects. It also hosts a 3 D animation film on accident model of fall of material from a high structure, exclusively developed by HO safety team.



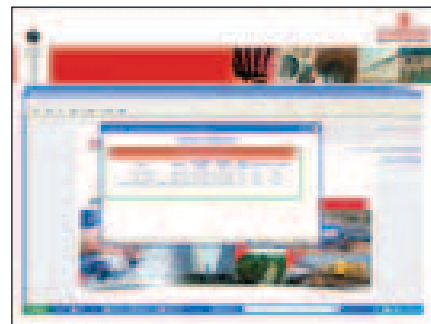
●Legal compliance and tracking tool was another strong measure adopted to ensure that all the statutory and legal requirements were fully met. Project sites were encouraged to go beyond the minimum requirements postulated by the statutes, to develop a strong safety culture.

●The presentation made was not limited to ISKCON but featured work from other project sites as well, thus portraying the functioning of HSE system in Gammon. The learned jury was highly impressed and was appreciative of Gammon's work. The first comment from the jury after the presentation summed it well - "Outstanding!! We have no questions".

However, they made some queries on our practices pertaining to employing

women at sites, the commitment of our leadership and care given to the impact on environment. All of the above were satisfactorily addressed in our response to the jury.

We take pride in sharing the above summary to all those concerned and interested to promote safety as an integral part of our main job. We are confident that with support of everyone we will surely achieve new heights in days to come.



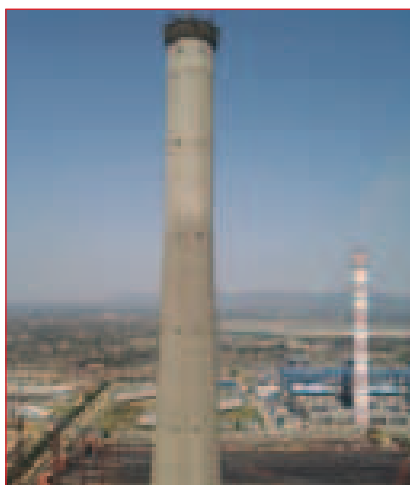
Other achievements of Gammon India Limited include:

- JSW Civil Works - 20 Million Safe Man hours - from JSW Steel limited
- Malwa NDCT & Chimney - 7.5 Million Accident Free Man hours – from L & T
- Munger Bridge - 6.2 Million Accident Free Man hours – from East central railway (Construction Department)
- MBPT-Prashansa Patra Award from National Safety Council Awards 2011
- ISKON - Prashansa Patra Award from National Safety Council Awards 2011
- Krishnapatnam - Prashansa Patra Award from National Safety Council Awards 2011
- Lapanga - 1.5 Million Safe Man hours & Chimney 1 & 2 RCC Shell completion – from HINDALCO, Aditya Aluminium Project
- Signature Bridge - 05 Million Accident Free Man hours – from DTTDC
- JSW Civil Works, Malwa NDCT and Chimney, Guwahati Water Supply Project and Signature Bridge - received safety achievement certificate from CMD Gammon India Ltd. for achieving 20 Million Safe Man hours, 7.5 Million, 6.25 Million and 5 Million safe man hours respectively

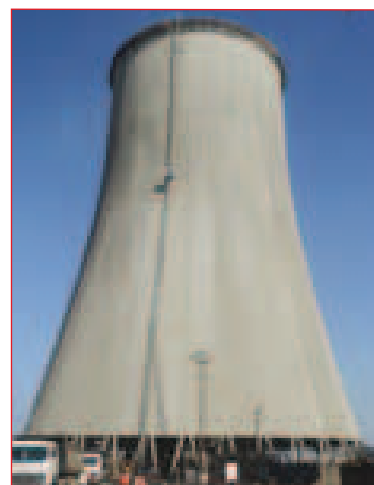
WORKS IN PROGRESS



275 m Tall - Chimney at GMR - Raipur



275 m Tall - Chimney at Raigarh



155 m Tall - NDCT at JSPL, Raigarh



30,000 Cum / hr capacity - IDCT, Vallur



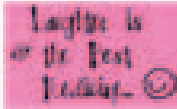
Sea Water Intake, Kalpakkam



Building works, IGCAR - Kalpakkam



Cooling Towers at JSPL, Raigarh



SERIOUSLY, LAUGHTER IS THE BEST MEDICINE

Humorous Side of Human Resource Management in Construction Companies - M. U. Shah

Implementing modern concepts of HR in a Construction Company has always been a big challenge. When an attempt is made to introduce such modern HR concepts in Construction Company, though we may not be sure whether the introduction will be successful or not; but, for sure, it leads to creation, at times unknowingly, of roaring hilarious situations. Presented below, ofcourse with due respects to whole of HR fraternity, few HR functions together with corresponding humour associated with these HR functions:

INTERVIEW

One Civil Engineer candidate, while filling up printed application form of a Construction Company, prior to interview, came across column: "Do you have any other source of income?" Initially he thought of writing, "What business you have with my other source of income?" But on second thought, and more appropriately, wrote, "If I had other source of income, I would not have applied for this Construction Company!" and when such answers appeared repeatedly, the Construction Company had to take a decision to delete this column from the printed form.

Another Civil Engineer candidate, in reply to an opening question by the interview panel, "Can you give your family background?"; replied, "After divorce of my parents, I was staying with my father who brought me up. My mother has obtained divorce after her second marriage and now experimenting live in relationships. My elder sister separated within a year of her marriage and staying with us, though not yet divorced. My elder real brother is presently under judicial custody. My younger half-brother has been rusticated from college."

Interviewer remarked, "Whole family appears to be negative. Is there any positive person in your family?"

The Civil Engineer replied, "Yes, Sir; I am positive person in the family."

The interviewer happily remarked, "Good to hear that" and further asked, "What are your positive attributes?"

The Civil Engineer replied, "Sir, I am HIV positive!!!"

LEAVE

One Site Engineer phoned his Boss in H.O.; "Sir, I need fifteen days leave."

"Leave? And that too fifteen days?" the Boss yelled.

"Yes, Sir"

"This is the most critical period of your job."

"Yes, Sir, But..."

"What for you need leave?"

"For marriage, Sir."

"Because of criticality of my job, if I can't take leave I depute someone else from my family for marriage."

"But Sir, this is not possible."

"What do you mean not possible?" the Boss yelled, increasing his decibels.

"Sir, I need leave for my own marriage."

"I had taken only three days leave for my marriage."

"Yes, Sir; for marriage I need only three days. Balance twelve days for my honeymoon."

"In my thirty five years glorious service, I have never taken leave for such purpose!!"

"But, Sir ..."

The Boss ordered, "You take three days leave, finish your marriage nicely and report back to site so that we can achieve current month's targets. As regards honeymoon, you can always have at site."

"Honeymoon at site?" site Engineer yelled trying in vain to control decibels.

"Yes, Why not?"

"Thank you, Sir. I don't want even three days leave."

"Why?" the Boss asked.

"Sir, I have decided not to marry. In fact I would advise even my children not to marry!!!"

SURGICAL OPERATIONS

Extremely perturbed by frequent leave applications on the ground of surgical operations, HR sent a Circular, "Operations are now completely banned. As long as you are an employee with the organization, we need all your organs and in their original form. You should not consider removing anything or modifying anything. We hired you intact. While in service you need to remain intact. To have something removed or modified constitutes a breach of employment contract!"

LEAVE TRAVEL ALLOWANCE

There were lots of grievances about amount of Leave Travel Allowance (LTA) being grossly insufficient and many representations were made to HR for increasing the same but, as usual, HR was adamant and refused to increase LTA.

Frustrated, one Project Manager wrote to HR:

"Two years back I went on LTA to Simla and my wife became pregnant. Last year I went on LTA to Mount Abu and again my wife became pregnant. This year, Sir, I want to take my wife along with me!!!"

OVER WORKING

One Project Manager's wife was requesting Project Manager to accompany her for a visit to gynecologist but busy and overworked Project Manager could not accompany her. Fed up, she went alone. When gynec gave her good news, overjoyed, the wife picked up phone and said to her husband, "Do you know what you have done? You made me pregnant!"

Puzzled, the Project Manager asked, "Who is speaking, please?"

PROMOTION

Becoming a Project Manager is the biggest dream for any Civil Engineer. One Civil Engineer was nurturing this dream for a long and was also sharing this dream with his wife. But, as usual, the promotion was not forthcoming. However one fine morning he received an email from HR confirming his promotion as a Project Manager. Overwhelmed with joy, he picked up the phone and to give surprise to his wife, he changed his voice and asked his wife, "Would you like to become a wife of a Project Manager?" But was shocked when his wife (who was frustrated by abnormal delay in promotion) replied, "May I know your name and address, please?"

SEMINAR OUTING

One HR guy who newly joined a Construction Company gave a presentation to the top Management that if we send key employees like Project Managers for an outing with their wives, it improves organizational productivity. Impressed, the top Management readily agreed though they had their own apprehensions about its success. HR implemented this idea and organized a Seminar in a beautiful resort at a hill station for a week between 12th to 19th March.

In the lounge of the Resort, one Project Manager purchased some goods for himself and came to cash counter. The shop owner, looking at the accompanying lady, asked the Project Manager, "Anything for your wife, Sir?" The Project Manager asked, "Can I get a post-card?"

For an immediate first-hand feedback directly from wives, on 22nd March, HR wrote to wife of each Project Manager as to how was the Seminar outing and mailed this letter to residence address.

As many as 80 % of wives replied, "What Seminar?!!!"

After the Seminar, one Project Manager said to his close friend; "One letter from HR changed my whole life. Earlier I was buying

imitation jewelry for my wife. After that letter I am buying diamond jewelry."

His innocent friend presumed that it must be a promotion letter or increment letter from HR which improved his standard of living and carried that impression for long until he came across an interesting Cash Scroll book cum personal diary of Project Manager reading:

Period	Date	Value	Purpose
Pre-Seminar	1st March	Rs. 250	Dress for wife
	6th March	Rs. 500	Imitation jewelry for wife
	10th March	Rs. 5,750	Cosmetics for wife
	11th March	Rs. 12,500	Gent's parlour expenses for self
Seminar	12 -19th March	Rs. 47,500	Gift purchases during seminar
	12 -19th March	Priceless	Seminar experience
Post-Seminar	24th March	Unquantifiable	Receipt of letter from HR at residence.
	24th March	Rs. 37,000	Orthopedic Doctor's bill for self (subject to recovery, if any, from Group Mediclaim policy)
	31st March	Rs. 2,22,500	Diamond studded necklace with 24 carat gold for wife through Credit Card

FAMILY BONDING AND COMMUNICATION

HR believed that family bonding and communication with family is very important and has a bearing on organizational productivity and accordingly invited an expert faculty to conduct a Seminar.

The faculty asked each participant, "When was the last time you said '**I LOVE YOU**'?"

The faculty, though was a veteran in this field, as far as Construction Company is concerned, he was conducting such Seminar for the first time. The replies received from the participants were something which were not anticipated by him nor something which can be discussed in a Seminar environment and hence immediately he admitted his mistake saying, "I am sorry. It is my mistake. I did not frame the question properly." and reframed the question: "When was the last time you said '**I LOVE YOU**' to your wife?"

The replies ranged 'from couple of years to decade' which surprised the faculty.

The faculty highlighted the need to express and reaffirm love every day or even several times a day and being vocal about it rather than taking it for granted. He gave a prescription to reaffirm love on daily basis or even more frequently and gave some useful tips.

One Project Manager, immediately on

reaching home from Seminar venue, implemented this prescription. Shocked, his wife yelled and called their son, "Chhotu, come here, call some doctor. Your dad has gone mad!!!"

As a follow-up activity post the Seminar, HR decided to conduct a survey asking all Project Managers, "Do you talk to your wife when you make love?"

As many as 80% replied, "Yah, I do talk, if mobile network is available!"

Again this was the case of a poor framing of question, which, like expert Seminar faculty, HR also realized subsequently.



No Entry !!!! - M. U. SHAH

Recently when CMD show me in the back seat of my car, he asked me, "You don't drive car?"

I replied, "No, Sir, I don't"

He asked, "Why?"

I replied, "Earlier I was driving but because of one incident, I left driving."

"Any accident?"

I said, "No, no, not accident, Sir" and I narrated this incident.

Once I was driving a car near a college in Kandivli.

I saw a brand new Audi car was behind my car.

This Audi car followed me for quite some time. I saw from rear view mirror of my car that a young gorgeous beautiful college girl, in her sweet seventeen, was behind the wheel.

She gave a beautiful smile to me which thrilled me though it was through mirror. I was pleasantly surprised as for the first time in my life I received a smile from a young girl and that too from a girl from a rich family who can afford to own and maintain Audi car.

When she kept on following me for 15-20 minutes, I got an impression that probably she is interested in me.

But the very next moment a thought came to my mind that how she could be interested in me? I am almost three times her age but then they say - love is blind and love do not see any age gap. She might have fallen in love with me at first sight, though I am neither handsome nor loveable.

She continued following me further and after some time she brought her car near my car, gave a beautiful smile to me and was about to tell something to me but unfortunately, to my bad luck, traffic signal became green.

This led me to confirm my belief that she wants to propose to me.

I started thinking as to how I should respond to her when she proposes to me which may happen at the next signal and perhaps I would become the first person to whom a girl proposed at a traffic signal.

I started thinking as to what reason I should give to my wife for divorce. But I decided to concentrate first on rehearsal of my affirmative reply to her when she proposes to me and about the reason for divorce, I can always think later.

At the next signal again she brought her car near my car, opened the power window of her car and smiled at me. I was jumping with joy and made myself ready to accept her, with open arms, the moment she proposes to me.

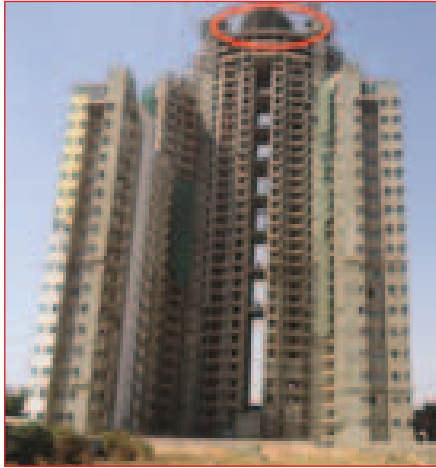
Again she gave one more beautiful smile to me, this time mischievously, and said, "Uncle, instead car, why don't you drive a hand cart ? !!"

ENGINEER SAID IT... By M.U.SHAH



NEWS FLASH FROM PROJECTS

SATTVA GOLD SUMMIT :



The site team led by Mr. Rajaram have successfully completed the casting of the helipad slab at 35th level (108 m above GL) at Sattva Gold Summit Project on 11th January, 2013. With the completion of the helipad slab, the team has completed RCC works of The SATTVA Gold summit project, which is the tallest building in south India as on date.

NATHANI HEIGHTS :

The site team of Nathani Heights has successfully commenced the RCC works of the Foundations, at our Project- Nathani Heights which is a 72 storied Prestigious tallest Residential Tower as on date in Mumbai.

JINDAL CIVIL WORKS :



Project- Jindal Civil Works, Bellary, Karnataka, has recorded 20 Million Safe Man Hours free of reportable accident as on 24th November, 2012 and hence awarded for, by the Chairman and Managing Director, JSW Steel Limited.

VISIT TO PHPP at BHUTAN :

Amal Bhattacharya – DGM & RCMS (Kolkata Metro Project) and his family visited Puna Sangchu Hydro Power Project, Bhutan.

They were highly impressed with performance of PHPP site team in spite of difficult working conditions.

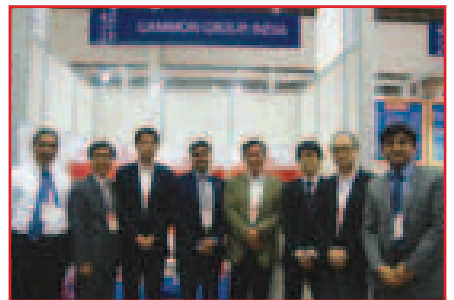


WOMEN'S DAY CELEBRATION

Women's Day was celebrated with lots of fun and joy on 8th March, 2013 at Gammon House & Belapur Office. "Gammon Springs" had organized special competitions like Rangoli, Marble and Spoon race, Sack race and Paper fancy dress which saw a number of Gammonites participating enthusiastically. The winners were later felicitated with prizes.



INDIA SHOW IN TOKYO, JAPAN



Gammon has participated in an exhibition at Tokyo, Japan. The objective of this participation was to showcase our strengths as India's one of the oldest and biggest construction company. The show was a grand success. We received an overwhelming response from Japanese construction and trading industry.

We also had chance to have interaction with Honorable Chief Minister of Madhya Pradesh, Mr. Shivraj Chauhan and Honorable Minister of Industries, Madhya Pradesh Mr. Kailash Vijayvargiya.

SWEDISH Delegation Visit to GAMMON



One Day Integration Programme with Swedish Delegation lead by Infrastructure Minister of Sweden

COMPANY NEWS

THANKS TO ESTEEMED CUSTOMERS

Baluaha Ghat Koshi Bridge
Bihar Rajya Pul Nirman Nigam Ltd.
C. V. : Rs. 231 Crores

WELCOME To GAMMON FAMILY



Deputy General Manager

Birendra Narayan Singh

Senior Manager

Christuraj Joseph
Prasad Neelkanth Dixit

Manager

M.S. Madhusoodanan
Nikhil Ravindra Virkar
Samiran Biswas
Srisha Addoni

Deputy Manager

Rabi Ranjan Bhattacharya
Basavaraj Huggi
Bellary Polepalli Gangadhar
Durairaj Kannappan
Satyendra Kumar Chaudhary
Sumanta Kumar Roy

Assistant Manager

Amit Ashok Wakde
Amrutha Devi Gokeda
Arindum Bharti
Arvind Vishnu More
Biswa Bikash Tripathy
Chandan Kumar Singh
Gita Srinivasan Iyer
Jayesh Pandya
Kanda Kumaran.A
Navneet Jaykumar Bhalerao
Rajan Jegan
Senthil Kumar .
Shubhangi Shirpute
Siddhartha Bhamidipati
Suresh Siva

Engineer

Abhishek Kumar Mishra
Diwanshu Gupta
Shailendra Kumar

Junior Engineer

Amrit Kumar Pait

Officer

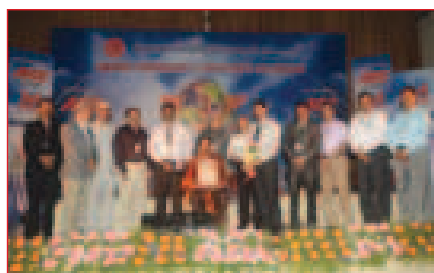
Devyani Joshi
Tushar Dhanu

AWARDS



ACCEI Award

"Association of Consulting Civil Engineers (India)" has conferred on Gammon India Limited its Prestigious Award for **"Excellence in Construction of Industrial structure"** for "Construction of Natural Draught Cooling Towers at Aravali in Haryana and Simhadri in Andhra Pradesh.



JSW Safety Award

Gammon India Limited was conferred with prestigious Safety Award by JSW Steels Limited, **for achieving 20 Million Safe Man Hours free of accident at Gammon Project site** - Jindal Civil Works, Bellary, Karnataka.



Safety Award –Godrej

We are very proud to communicate that our Godrej Platinum (9104), Project Site Bangalore has won the First position with 85.85% in the 4th edition of Godrej Safety Award amongst all the current Godrej projects across the country.

GIL PARTICIPATION IN SEMINARS



Dr. N. V. Nayak

16th January 2013

Delivered a lecture on "Innovative Use of Fine and Ultrafine Pozzolan Materials in High Performance Concrete" at Kolkata, in seminar organized by Ambuja Cements.

23rd January 2013

Delivered a lecture on "Benefits of Fine and Ultrafine Pozzolan Material in High Performance Concrete – Indian Innovations" at BIT collage Hall, Bangalore organized by BIT, RMCMA Quality Circle, & ACCE (I), Bangalore Centre, Bangalore.

Girish Bhat

Participated in Board Meeting of Chartered Institute of Management Accountants (UK).

V.N. HEGGADE

22nd March 2013

Attended IRC B-4 committee meeting at MSRDC office, Bandra - Mumbai.

ASHISH GUPTA

16th February 2013

Participated and delivered a lecture on Hydro-Power Development innovative practices in construction and design aspects at Kolkata organized by WBSEDCL

FAMILY RECOGNITIONS



Desiree Nayak

Granddaughter of Dr. N V Nayak has been selected by Hindustan Times as one of the top 50 Brightest Students amongst 57000 applicants from 280 schools in Mumbai.

Divya Thakkar, daughter of Mr. Bahvesh Thakkar (Deputy Manager, GIL) and **Kiranmayi P. Rao**, daughter of Mr. P. S. Rao (Manager, Plant) have entered Guinness Book of World Records by participating in third international dance (Kuchipudi) convention held at Hyderabad on 25th December 2012. The convention created a record where over 5700 dancers ensemble to perform Maha Brinda Natyam, organized by Silicon Andhra.





BUILDERS TO THE NATION

Gammon's Concrete Contribution in Reinforcing Infrastructure in INDIA



Agra Makhanpur Expressway NH-2



Kosi Bridge NH-57



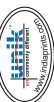
Mumbai- Nasik Expressway NH-3



Rajahmundry Expressway NH-16

We

- were incepted in 1919
- have built largest number of bridges in commonwealth
- developed one of the largest National/ State Highway network in India
- own 23 infrastructure projects on PPP model including 14 road projects
- are in infrastructure encompassing
 - ❖ Transportation: Roads, Railways, Ports
 - ❖ Energy: Hydro, Thermal & Nuclear
 - ❖ Environmental: Water & Waste Management
 - ❖ Industrial Structures, Building & Utility Services



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