Making RFIs More Effective

Sheet Metal and Air Conditioning Contractors National Association, Inc.

www.smacna.org

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By

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First Edition 2016

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The Request for Information (RFI) process has been used for years to resolve construction related challenges. Increasingly contractors are being negatively impacted by the slow response or even no response to questions posed to the general contractor, architect, engineer and/or owner. The challenge has become so widespread that this white paper has been commissioned to investigate reasons why the RFI process has become largely ineffective in many cases and what can be done to help improve the process. The end game is simple. Contractors need timely, accurate and complete information in order to fulfill their contractual obligations. Schedules and budgets cannot be reasonably expected to be met if critical information is not provided addressing design, constructability, code compliance, material selection, means and methods and other related challenges that arise in the natural course of a construction project. Within this white paper, the following issues will be reviewed:

- The resultant impacts if RFI responses are incomplete, inaccurate and/or not timely
- The role of the contract methodology on the RFI Process
- Contract specific language that may improve the RFI Process
- Proven practices to minimize the impact of RFIs
- Expectations moving forward

The objective is to provide practical tools and ideas that can be utilized in nearly all contract methodologies and regardless of the vertical market sectors a company services that will ultimately improve the RFI process.

The RFI Snowball Effect

Budget overruns and schedule delays are rampant in the industry. Many see it as a field execution issue but reality is the delays and overruns are rooted much further upstream in the process. As responses to issues are delayed or unresolved, the snowball effect sets in full motion with the field staff typically absorbing the brunt of the impact as completion dates are held. Enter the RFI process. While not the only culprit in this matter, it is certainly a major player. A closer look at the resultant impact of incomplete, inaccurate and untimely responses reveals a significant series of cascading events driven by the RFI Process. The impact looks something like this:

- An RFI is submitted by the Sheet Metal Contractor related to a space constraint identified in the coordination process. Quite simply, everything designed for a specific area will not physically fit in the allowable space, or the ductwork hits a steel beam, or the electrician's conduits are running through the ductwork…all the issues any contractor has seen many times.
- An RFI is issued to the general contractor seeking clarification on routings or potentially proposing a solution that modifies routings and / or duct dimensions / configurations.
- The general contractor kicks the issue back to the contractor based on "field verification of dimensions" and tells the Sheet Metal Contractor to resolve the issue as part of "field coordination."
- The sheet metal contractor responds indicating the changes requires a variance

in excess of the contractually specified limits (e.g. – no systems shall be installed more than 12 inches from the originally specified location) which requires approval and may result in a change order.
- The general contractor goes to the engineer for approval, which is ultimately granted and the engineer fears the incoming change order from the sheet metal contractor.
- The Sheet Metal contractor acknowledges the "change directive" from the engineer and proceeds at "no cost" trying to build "good faith" with the project team.

While all of this is transpiring within the RFI process, here is a list of what is NOT happening that will result in downstream impacts to the sheet metal contractor:

- Shop drawings for the sheet metal cannot be produced
- Submittals for review and approval to the owner / architect / engineer / GC cannot be produced
- The materials necessary to manufacture the finished goods (e.g. - ductwork) cannot be procured
- Without materials, the finished goods cannot be manufactured
- Without finished goods, the product cannot be packaged or shipped to the jobsite
- Without material, the field cannot hit any production target, budget or schedule
- Without an installed product the end user cannot take beneficial or full occupancy thus commencing the warranty period

And while the sheet metal contractor has issues to deal with, what is the impact on the other trades?

- Will the structural steel need to be modified?
- If so, what impact will it have on the concrete/ foundation work?
- What will happen to the electrician's work?
- Will the downstream finishes need to be modified to support the change?
- Will the customer be happy with the end result?
- Will the engineer accept the charges associated with all these changes?

A seeming simple issue related to routings and elevations has now cascaded throughout all parties in the project. Significant complexity has been introduced based on a relatively simple issue. Is it any wonder then why RFI responses are slow at best and no response at all in the worst case? The series of events delineated above represent why the slow response/no response approach to RFIs has a huge impact on contractors. A better approach is needed and will be discussed, but first, a look at factors affecting the degree of impact of an RFI is warranted.

Factors Affecting the Degree of Impact of the RFI

The complexity of the issues addressed by the RFI itself will certainly affect how timely, accurate and complete any RFI response is. Obviously, large complex issues will take time to resolve while simple matters should be relatively easy to get answers to. Other factors should also be considered that may be

impacting the ability of the responsible parties to respond:

- The engineer's workload is often times a significant impact to the contractor's ability to get a timely response. Engineers and architects are under the same fee pressure as contractors to do more with less in a competitive landscape where fee pressure is high. The result is overloaded engineers unable to address all the issues presented to them.
- The general contractor also plays a role in the process because they can be unwilling to send RFIs along to the engineer, deeming them "field coordination" issues. This reluctance takes time to overcome and simply contributes to the snowball effect described earlier. In many cases general contractors have young, inexperienced project managers that simply lack familiarity and experience with the trades. If the general is unable to grasp the issue, a delay to the RFI will result.
- The owner's attitude toward RFIs is also very important. If they view RFIs as a waste to time or insignificant to the construction process delays will likely result.
- Project schedules also impact the RFI process. Many contractors have worked on Build – Design jobs that were supposed to be Design – Build. The RFI process becomes a paper trail of what was already built. The RFI Process must get ahead of the project schedule.
- Lastly, contractors play a role in the RFI Process based on how they use the tool. An RFI should not be used as a weapon or to become a change order artist. Companies that do so will gain that reputation and the impact will be a community that knows if they respond with even the slightest change they will get hit with a change order.

The Role of the Contract Method on the RFI Process

Another aspect to be considered is the contract methodology. The RFI process is greatly impacted by the contract methodology chosen. Design build projects where the general contractor sits over the engineers and architects creates an environment of accountability and teamwork that does not exist in other contractual formats. Design build projects tend to have far fewer RFIs and resultant change orders. Design assist has also gained in popularity. Design assist allows the contractors to make recommendations to the architect and engineer in a non-confrontational manner that addresses constructability issues before they become change orders. Lastly, plan and spec projects that have issued construction documents for pricing are typically rampant with RFIs and change orders. For many of the reasons cited previously, documents are incomplete, inaccurate and not buildable. The result is many RFIs which create confusion and waste.

Legal Considerations

There are a few legal issues contractors should be aware of when it comes to the RFI process. First, it is recommended that whenever possible, get specific language related to the RFI process incorporated into

the prime contract. The language specifies the parties involved in the RFI process and most importantly, a required response time. Without a contractually specified response time, it is virtually impossible to hold anyone in the process accountable and the quantification and acceptance of the resultant impacts will be hard to prove and even harder to get paid for. The second aspect contractors should be aware of is the design liability associated with suggested solutions. Depending on the contractual format, the Sheet Metal Contractor might own the design liability associated with a specific recommendation that could come back in the event of a failure of the installed systems.

Proven Practices to Make RFIs More Effective

Given all this complexity and uncertainly, how can a contractor improve the RFI process to yield timely, accurate and complete responses? Here are some proven practices that will likely help:

- **Clearly define the problem.** To the greatest extent possible, issues should be isolated to one item versus compound problems. The more simplistic you can make the issue, the more likely you are to get a timely, accurate and complete response.
- **Improve staff writing skills.** As the old adage goes, "I would have written you a shorter letter if I had more time" still applies. The average project manager in construction falls in the bottom 10% of the population in terms of vocabulary. The tendency is to have poorly written RFIs that lead to open questions and unclear problem definition. Minimize the technical jargon and maximize the problem statement in a clear and concise fashion. The basic rule is, if you pull someone off the street, have them read the RFI and accurately explain the problem, you have a well written RFI. If the person off the street does not understand, there will likely be parties involved in the RFI process that won't understand the questions or problem posed.
- **Formalize the Process.** Don't allow your project teams to do everything by email and text. It's the easy button for them and can lead to unintended consequences. RFIs should be formal using a standard RFI form and tracking log. Examples of both are provided in **Appendix A and B**.
- **Issue a "No Cost or Impact" RFI early on the project.** The idea is to get the RFI process moving in a non-adversarial way that will help flush out the process. It is a similar principle to making the first change order on a project a credit. The negotiation of the change becomes less adversarial and establishes protocol. Use the same logic for the RFI process. Find something to ask an intelligent question about and issue the RFI to help define the process and flow of information.
- **Propose solutions.** Any time an engineer/architect/owner only has to validate a solution instead of creating a solution the process will be faster. Always provide at least two alternatives to the solution and request the engineer agree to one of the solutions absolving the contractor of the design liability previously discussed. The

contractor is always the “installer”, not the engineer of record. Make that distinction clear unless it’s a pure design build project, in which case errors and omissions insurance is mandatory.

- **Define what constitutes an adequate response.** In some cases, particularly complex or compound issues, it is helpful to define what constitutes an adequate response. The RFI should break down the various aspects of what needs to be answered. For example, provide a listing of the information necessary to be able to move forward with an RFI response. If the party responding to the RFI has a clear list of the information you need to proceed beyond the RFI, it is far more likely you will get a comprehensive response that is timely, accurate and complete. Don’t’ make them guess what information you need – Tell them.
- **Defer any cost or schedule impacts.** Until the response to an RFI is known, it is impossible to quantify any cost or schedule impacts. In every RFI, the cost or schedule impact should be listed as “TBD” until an exact response is known. Indicating the cost or schedule impact will likely delay any response and increase the adversarial aspect of the RFI. If a change results from the RFI impact, a notice of change should be issued and logged in the change order log.
- **Institute an RFI Escalation process.** Ensure that RFIs don’t age and treat them like a receivable. There should be a formal RFI escalation process that defines who does what when so that RFIs don’t go unresolved resulting in the series of cascading events described earlier.
- **Use your ERP System!** Nearly all ERP systems (i.e. – Viewpoint, Spectrum, Timberline, Etc.) have project management modules that allow a “ball in court” type of tracking so anyone can clearly see the status of outstanding RFIs. Additionally, many ERP systems have the ability to notify project managers and their support staff and supervisors of overdue items. Viewpoint uses notifier function, Timberline has a bolt on called My Assistant…use these tools, they work! In the event your ERP package doesn’t have these abilities, you can buy a product called ReportRunner that is system agnostic and will bolt onto any package that is sequel based and allow you to do the same thing.
- **Put visibility on outstanding RFIs.** Most companies review their jobs once a month. Include the number of outstanding RFIs, submittals, etc. on the job status report so there is visibility at all levels of the organization what is happening. A sample of this is shown in **Appendix C**.
- **Advocate for the engineer.** Don’t use the RFI process to make the engineer look like an idiot. Help make the engineer part of the solution not the reason for the problem to begin with. You catch more bees with honey than vinegar.
- **Standardize the process.** Use tools like value stream mapping to pull all the parties together to conduct a segment value stream so everyone understands the current state

and desired future state of the process. The result should be a swim lane process map and a relational process map that all parties understand and adhere to. The process will define the standard of how the process works and make the associated parties responsible to fulfill their roles in the process. An example output is shown in **Appendix D.**

Conclusions

The fact of the matter is documents in the construction industry will likely continue to decline in quality. RFIs will continue to be a fact of life for contractors for years to come. The use of integrated project delivery, design build and design assist offer the greatest opportunity to reduce the number of RFIs. Use of the tools and techniques described herein should make the RFI process flow more readily and with less adversity. The establishment of a standard process that is continuously followed and measured for results is the best path toward improving the effectiveness of the RFI process.

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XYZ
CONSTRUCTION SET FOR ANY AGE

100 Fillmore Street, 5th Floor
Denver, CO 80206

FURNISH/INSTALL VENT FANS
CENTRAL ARTERY
TUNNEL PROJECT
XYZ CONTRACT NO. C20B1
MAXIM PROJECT NO. 4011

TYPE CODE:
DC - DESIGN CHANGE
CC - CONTRACT CHANGE
VR - VARIANCE
CL - CLARIFICATION
MR - MINOR REQUEST
AI - ADDITIONAL INFORMATION

STATUS:
O - OPEN
C - CLOSED
C/I - CLOSED/INCORPORATED
C/NI - CLOSED/NOT INCORPORATED

REQUEST FOR INFORMATION LOG

RFI NO.	SUBJECT	DRAWING/SHEET/SPEC. NO. REFERENCE	TYPE CODE	DATE SENT	RESP. DATE	DATE RECV'D	DISPOSITION/COMMENTS	STATUS
001	DESIGN STRESS LEVEL	997.876	CL	02/09/11	2/19/2011	03/02/11	Answered (see attached response)	C
002	ALTERNATE HUB DESIGN	997.876	CL	02/09/11	2/19/2011	03/02/11	Answered (see attached response)	C
003	SHAFT DESIGN CODE	997.876	MR	02/09/11	2/19/2011	03/02/11	Answered (see attached response)	C
003.1	FAN SHAFT STRESSING AND FATIGUE ANALYSI	997.876	MR	06/15/11	6/29/2011	07/02/11	Answered	C
004	FAN MANUFACTURER-BUY AMERICAN	Q56, ADDEN.#5 QUESTIONS & ANSWE	CL	02/16/11	2/26/2011	03/02/11	Answered	C
005	THEORETICAL FAN CURVES	SPEC. SECTION 8.000-005-A	MR	03/22/11	3/26/2011	04/06/11	Answered (see attached response)	C
006	POWER TRANSMISSION DRIVE	SPEC. SECTION 997.876	VR	04/26/11	4/30/2011	05/05/11	Not Approved-WITHDRAWN	C
006.1	BELT DRIVE RATING		VR	06/07/11	6/22/2011	06/22/11	WITHDRAWN- See Letter No. 04011-0251	C
007	EXHAUST AND SUPPLY FAN IMPELLER/SHAFT S	SPEC. SECTION 997.876	CL	04/30/11	5/10/2011	05/11/11	Answered	C
008	AMCA MODEL FAN TEST SET UP	AMCA FIGURE 12	CL	05/14/11	6/3/2011	06/04/11	Not Approved	C
009	EXHAUST AND SUPPLY FAN SHAFT DESIGN	997.876	CL	05/25/11	6/16/2011	06/21/11	Answered (see attached response)	C
010	ACCESS RESTRAINTS FOR FAN CHAMBERS	DIV. I SPECIAL PROVISION SECTION 8.(	CL	05/25/11	6/10/2011	06/11/11	Answered (see attached response)	C
011	RAMP CN-S & VENT BLDG 8 PERMANENT POWE	DIV. I SPECIAL PROVISION SECTION 8.(	CL	06/01/11	6/21/2011	06/22/11	Answered (see attached response)	C
012	CENTRIFUGAL FAN MOTOR NEMA INERTIA LIM	997.876 2.02A.7.e.3	CL	07/06/11	7/26/2011	08/10/11	Answered (see attached response)	C
012.1	CENTRIFUGAL FAN MOTOR NEMA INERTIA LIM	997.876 2.02A.7.e.3	CL	12/20/12	12/28/2012	01/08/13	Approved	C
013	FAN DAMPER PAINT SPECIFICATION	997.865,.876,.877	CL	07/21/11	7/27/2011	08/06/11	Answered (see attached response)	C
014	FAN DAMPER AXLE SPECIFICATION	997.865 & 997.876	VR	07/21/11	7/27/2011	08/10/11	Answered (see attached response)	C
014.1	FAN DAMPER AXLE SPECIFICATION	NONE	DV	10/13/11	11/12/2011	11/15/11	Not Approved	C
014.2	FAN DAMPER AXLE SPECIFICATION	NONE	DV	11/24/11	12/13/2011	01/25/12	Approved (Submit As VECP)	C
015	FAN DAMPER SHAFT BEARING SPECIFICATION	997.877, PARA 2.07.C	VR	07/21/11	7/27/2011	08/06/11	Answered (see attached response)	C
015.1	FAN DAMPER SHAFT BEARING SPECIFICATION	997.877, PARA 2.07.C	DV	10/12/11	11/10/2011	11/17/11	Answered (see attached response)	C
015.2	FAN DAMPER SHAFT BEARING SPECIFICATION	997.877, PARA 2.07.C	CL	12/16/11	12/16/2011	N/A	Withdrawn- See Letter No. 04011-0135	C
016	Location of Damper Motor Starter and Controls	Internal	INT	07/20/11	8/16/2011	N/A	Answered	C
017	MOTOR OVERLOAD PROTECTION OVER-RIDE	998.925, PARA 2.01.B.3 & 2.01.A.9	CL	07/21/11	7/28/2011	08/06/11	Answered	C
018	VB5-EF6 AFC DIMENSIONS	DWG C20B1-E-424	VR	07/21/11	8/10/2011	08/11/11	Answered See Attached	C
019	PLC Command For location of local disconnect	Internal	INT	07/20/11	8/16/2011	N/A	Answered	C
020	I/O Cable Communication	Internal	INT	07/20/11	8/16/2011	N/A	Answered	C
021	RK 1 Fuse Req. for Damper Motor Starters	Internal	INT	07/20/11	8/16/2011	N/A	Answered	C
022	Use of Digital Output Vice analog for speed reference	Internal	INT	07/20/11	8/16/2011	N/A	Answered	C
023	SOUND TESTING OF PROTOTYPE FAN AT AMCA	997.876 PARA 1.05.B.8	VR	08/03/11	8/13/2011	08/16/11	Approved	C
024	TUNNEL JET FAN PERFORMANCE	DIV. II-SPEC. PROV./DIV. IV-CONT.DRW	CL	07/30/11	8/13/2011	08/16/11	Answered (See comments)	C
025	LOCATION OF DAMPER MOTOR STARTER	998.925	CL	08/25/11	9/14/2011	09/15/11	Answered (see attached response)	C
026	RK 1 Fuse Req. for Damper Motor Starters	997.876, Para 2.13.C & DWG E-470 Rev2	CL	08/26/11	11/5/2011	11/09/11	Answered--FCN ISSUED	C
027	Cable Tray Type	DIV. II-Spec Sec 998.050-Cable Tray	CL	09/10/11	9/28/2011	10/01/11	Answered (Declined)	C
028	Milestones and Liqiudated Damages	Div I-Special Provisions sec.8.03.A.6,9.11	CL	09/17/11	9/22/2011	09/22/11	Answered	C
029	Plenum Wall/Airlock Door Shop Drawings	Div I-Sec. 5.02.B.1 & Div 3 Sec 997.876 Pa	CL	09/22/11	10/5/2011	10/06/11	Answered	C
030	Exhaust Fan Damper Operator Horsepower	Special Provisions Sec.997.877 para2.09.A	CL	10/12/11	11/9/2011	11/10/11	Answered (See attached Comments)	C
030.1	Exhaust Fan Damper Operator Horsepower	Special Provisions Sec.997.877 para2.09.A	CL	12/03/11	12/22/2011	12/30/11	Answered (See attached Comments)	C
031	Embedded Struts for Jet Fans	997.876 Para 1.03.B & DWG M-072 Rev.3	CL	10/21/11	11/12/2011	11/15/11	Answered (See attached Comments)	C
032	Flow Switch for Jet Fans	Div. II-SpecProv Sec 997.867 Para2.02.D.2	VR	11/03/11	11/17/2011	11/19/11	Approved	C
033	Jet Fan Casing and Silencer Paint Systems	Div. II-SpecProv Sec 997.867 Para2.06.B a	VR	11/03/11	11/15/2011	11/15/11	Contract Change Required-N/C Mod to be issued	C

APPENDIX B – SAMPLE RFI

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JOB TITLE

PAGE _____ OF _____

RFI NO: _____
FILE REF: _____
DATE RECEIVED: _____
DATE CLOSED: _____

REQUEST FOR INFORMATION

I. **TO:** _____

CONTRACT: _____ **SUBMITTAL NO:** _____ **DATE:** _____

CONTRACTOR: _____ **REQUESTED BY:** _____
SIGNED/TITLE/PHONE

SUBJECT: _____

II. **DESCRIPTION**

AFFECTED DOCUMENTS

COST IMPACT	**SCHEDULE IMPACT**

JUSTIFICATION ☐ ADDITIONAL SHEETS/SKETCHES/SPECIFICATION COMPARISON SHEETS ARE ATTACHED

_____ _____
AUTHORIZED REPRESENTATIVE DATE

III. **TYPE**
☐ DESIGN ☐ ELECTIVE VARIANCE ☐ NON-ELECTIVE VARIAN ☐ CLARIFICATIO ☐ MINOR CHANGE ☐ ADDITIONAL INFORMATION

REQUIRED REVIEW(S) ☐ PE ☐ SDC ☐_____	RESIDENT ENGINEER DATE

IV. **RESPONSE**

REVISED DOCUMENTS:
☐ ATTACHED ☐ TRANSMIT BY: _____

RESPONSE BY (NAME/TITLE/FIRM) DATE	REVIEWER (NAME/TITLE/FIRM) DATE
	REVIEWER (NAME/TITLE/FIRM) DATE

V. **DISPOSITION** ☐ PROCESS AS A VECP

☐ NOT VALID ☐ APPROVED ☐ CONTRACT CHANGE
☐ ANSWERED ☐ NOT APPROVED REQUIRED (PP1206)
ISSUE NO:_____

RESIDENT ENGINEER DATE

CRE090 (9/99) PP-1237

Job Status Report

MAXIM TEST Folder For JIM — Date: 8/6/2015

1411-1234 Maxim Town Hall 12.5kV

Owner:	KSU Div. or Facilitiies - Planning	**Superintendent:**	Brian Chickowski
Project Manager:	Michael McLin	**Foreman:**	Stephane McShane

Contract Amount	$332,000.00	Estimated Start Date	5/2/2014	Original Gross Profit	$29,091.35	9.60%	Amount Billed-Net	$11,313.00
Approved CO's	$0.00	Original Completion Date	10/31/2014	Revised Gross Profit	$29,091.35	9.60%	Amount Paid	$11,313.00
Contract Total	$332,000.00	Revised Completion Date	11/15/2014	Pending Gross Profit	$29,091.35	9.60%	Retention	$1,257.00
Proceed Pending CO's	$0.00			Dollars Received	$11,313.00		Paid/Cost Variance	($48,885.85)
Submitted CO's	$0.00			Dollars Spent	$54,855.05		Billed/Cost Variance	($48,885.85)
Claims CO's	$0.00			Cash Flow	($43,542.05)			

Job Costs	Orig. Budget	Current Budget	Actual to Date	Var. @ Comp.	Cost @ Comp.
Labor - Craft	$70,389.55	$70,389.55	$20,770.90	$0.00	$70,389.55
Labor - Non Craft	$13,127.10	$13,127.10	$11,680.59	$0.00	$13,127.10
Material Actual			$19,797.56		
Material Open Com.			$14,327.88		
Total Material	$131,694.00	$131,694.00	$34,125.44	$0.00	$131,694.00
Job Expense/Other	$2,188.00	$2,188.00	$2,622.25	$0.00	$2,188.00
Equipment Actual			$5,327.55		
Equipment Open Com.			$0.00		
Total Equipment	$19,510.00	$19,510.00	$5,327.55	$0.00	$19,510.00
Subcontracts Actual			$0.00		
Total Subcontracts			$59,145.50		
Subcontracts Open Com	$66,000.00	$66,000.00	$59,145.50	$0.00	$66,000.00
Totals	**$302,908.65**	**$302,908.65**	**$60,198.85**	**$0.00**	**$302,908.65**
Total Margin	**$29,091.35**	**$29,091.35**	**$5,781.50**	**$0.00**	**$29,091.35**

Original Cost Per Manhour	$37.81	Orig. Budget Manhours	2,208.66	Earned Manhours	966.50
Current Est. Cost Per Manhour	$37.81	Current Budget Manhours	2,208.66	Productivity	1.00
Actual Cost/MH To Date	$33.58	Manhours @ Completion	966.50	Labor % Complete	43.76%
Craft Labor This Month	$20,770.90	Manhours to Date	966.50	Billed % Complete	3.79%
Non-Craft Labor This Month	$3,089.73	Manhours This Month	751.50	Cost to Cost % Comp.	19.87%

Document Control	Total	Outstanding	Overdue
RFI			
Submittal	16	15	

Project Manager _____ **Senior Executive** _____

* Variance in Total Margin exceeds 10% @ Completion, If YES attach explanation ☐ Yes ☐ No

APPENDIX D – RFI PROCESS